"Only an alert and knowledgeable citizenry can compel the proper meshing of the huge industrial and military machinery of defense with our peaceful methods and goals, so that security and liberty may prosper together."

— President Dwight D. Eisenhower
from his farewell address, January 17, 1961

ALBEDO: STRUCTURAL INTEGRITY

ALBEDO: STRUCTURAL INTEGRITY

Sanguine Productions in association with Thoughts and Images present "Albedo: Structural Integrity"
Created by: Steve Gallacci
Written by: Greg Porter
Original Game Design by: Jason Holmgren with Michael Arbogast
Additional Material by: Jason Holmgren
Illustrated by: Jason Holmgren with Steve Gallacci (pp. 263-274, 276-282, 292), Conrad Wong (p. 216, 232)
Art Direction by: Jason Holmgren
Directed by: Jason Holmgren
Executively Produced by: Ted Wadsworth
Edited by: Fred Stanton with Kevin Clark, Jason Holmgren, John Fuller, Greg Porter, Diana Wray
Play-tested by: Bret Jones with Kreela Moore, Lucas Hald, Nathan Jarrett, Daniel Murphy
Thanks to: Bret Jones, Chuan Lin, Edwin Wendell Dean III, Fred Stanton, Pieter van Hiel

DEDICATION

This one's for Eric Nelson. We will remember you.

SANGUINE PRODUCTIONS LIMITED

2692 Madison Road #279
Rookwood Pavilion, Suite N1
Cincinnati, OH, 45208
Sol III (Earth)
Telephone & Facsimile +1 312 803 1961

Official Platinum Catalyst website:
http://www.sanguine.com/Albedo

"Albedo," "Erma Felna," related characters and their likenesses ©1984, 2006 Steve Gallacci. All other material ©2006 Sanguine Productions Limited. All rights reserved.

TABLE OF CONTENTS

ΖΧΦΨΙ ΡΓ ΗΡΠΖΕΠΖΖ

Introduction 178
- Why We Fight 178
- Timeline of Events 180
- How We Fight 180

Technologies 182
- A World Without Baggage 182
- Armor Tech 183
- Weapons Tech 184
- Unconventional Warfare 185
- Medical Tech 186
- Robotics Tech 186
- Social Tech 186
- Extreme Tech 187

Variant Rules 189
- Morale 195
- Ribbons and Medals 195
- Spaceship-to-Spaceship Combat. 196
- Vehicular Combat 197
- Fog of War 206
- Gravity 215
- Damage at Range 216
- Species 225
- Physique 228

Build & Repair 231
- Building Vehicles 231
- Power 232
- Loading a Vehicle 237

New Gear 244
- Hunting and Gathering 244
- Utility Items 246
- Weapons 250
- Consolidated Weapons Table (Older Ordnance in Gray) 262

Vehicles 264
- AV-4 series (EDF) 264
- ILR Vehicles 268
- Civilian Vehicles 272
- Aerodynes 276
- EDF Theater Assets 279
- Air Assault Battalion 282
- EDF Company Assets (EDF) 284
- EDF Platoon Command Structure 287
- EDF Squad Assets 288
- ILR Theater Assets 295
- ILR Squad Assets 299

Index 302

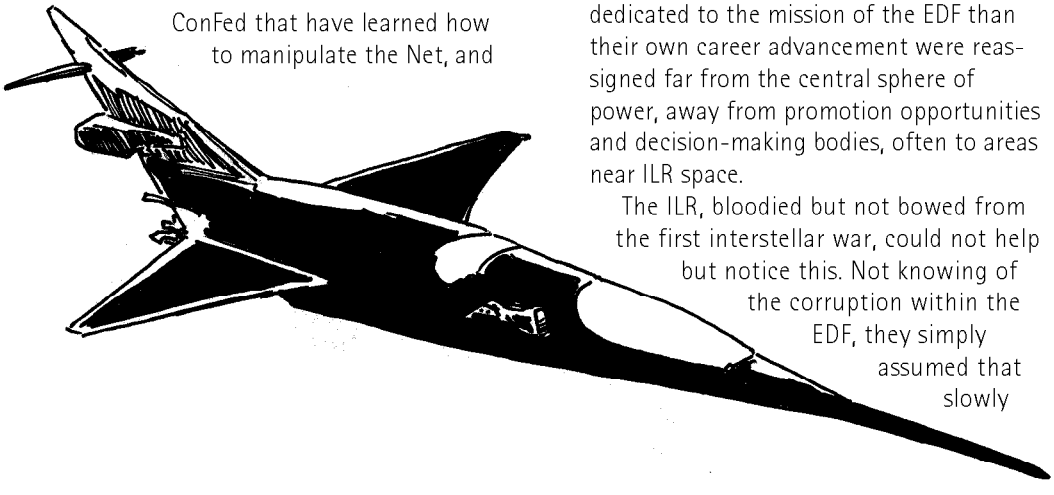
INTRODUCTION

ΥΛΖΠΡΒΥΗΖΥΛ

Why We Fight

The *Albedo* rules give some background on how the sentient species came to realize who and what they were, and some notes about the first interstellar war, but it does not say a lot about the nature of the current conflict with the ILR.

There are elements within the EDF and ConFed that have learned how to manipulate the Net, and the importance of this cannot be overstated. In a civilization that is essentially paperless and communicates through a distributed network, being able to alter Net information means you can alter history.



In the years preceding the second interstellar war, the corrupt elements within the EDF began moving the old guard out of the way. Experienced personnel who were more dedicated to the mission of the EDF than their own career advancement were reassigned far from the central sphere of power, away from promotion opportunities and decision-making bodies, often to areas near ILR space.

The ILR, bloodied but not bowed from the first interstellar war, could not help but notice this. Not knowing of the corruption within the EDF, they simply assumed that slowly

moving all the most experienced personnel to the edges of ILR space was a stealthy prelude to a full-scale assault on or invasion of ILR worlds. Since the EDF had used extreme tactics like orbital bombardment on ILR worlds in the first war, this was not a pleasant prospect. The ILR geared itself for conflict.

The corrupt EDF elements saw this, just as the ILR saw the EDF actions, and similarly misinterpreted them. Knowing that a war with the ILR would help cement their legitimacy in power, they did nothing to disillusion the ILR. Any ILR military action would provide a reason for curtailment of civil liberties for the "duration of any emergency" and also conveniently remove many of the old-guard EDF personnel through combat attrition (especially if potentially troublesome people constantly got the most hazardous assignments). However, the EDF could not be seen as the *aggressors* if the ConFed worlds were to support EDF actions.

Once both sides had reached a certain level of mobilization, the ILR felt a need to test the EDF's will and intent. This took the form of a fairly underpowered assault against the Dornthant system, one of the central Confederation worlds. The corrupt elements of the EDF deliberately prevented sufficient military response to the attack on Annah, allowing at least six ACVs to strike this planet's cities, causing over a million immediate casualties.

This double misinterpretation of intents turned an ILR saber-rattling exercise into the opening shot of the second interstellar war. There are loyal EDF elements who are aware of exactly what happened on the EDF side, but the corrupt elements have control of the "history" of how it played out. The "official" line is that rogue EDF elements had plotted a takeover of the Dornthantii government, and *their* actions caused the planetary defenses to fail, resulting in the massive destruction that followed. *That is, the people who caused the problem have successfully managed to blame it on those who were trying to stop it.* Public trials could prove embarrassing, and outright disappearances could be equally risky. Instead, potentially troublesome EDF personnel have been reassigned to distant, hazardous assignments from which they are not expected to return alive. These are also assignments these personnel are unlikely to return from. Erma Felna is one of those troublesome individuals, and she is currently on one of those high-risk assignments, commanding strike ship H2701. Her small, under-staffed ship is currently tasked with raiding facilities in ILR space to cut into the production and transport of war materials. She is not expected to return from this mission (but we know that she will manage somehow...).

Have no doubts about it. The ILR and EDF *are* in a serious shooting war here. However, the motivations of each side are far from clear and while the ILR is more prone to using despicable tactics, the EDF has the blood of its own people on its hands. For the EDF, the goal not simply a military victory but a victory that garners the maximum political and economic benefit for the conspirators at its heart. This goal can be reflected in the unusual mission orders, and in logistics that are inadequate, excessive or simply incongruous (such as no winter gear for a cold planet). These irregularities can be compensated for, but they affect performance or maintenance or operational readiness – perhaps as a means towards a particular result. This could keep a particular unit or even a particular person on a front line instead of coming home, turn an easy victory into a costly one, make certain commanders look good or bad, influence the governments of nearby planets by making a threat look larger, and so on.

Characters are unlikely to be aware of the problems at the core of the EDF, at least early in a campaign, but this rot is something that will eventually affect anyone who has a promising career and whose personality places them at odds with those who are and plan to stay in the heart of ConFed power.

Timeline of Events

Most Game Hosts will want to follow the history that is established in the *Albedo* comic, simply expanding on it or adding events that would not have affected the characters in the series. This means keeping within a rough timeline of possible events. With the exception of relatively small scale 'throw away' operations like Derzon and Chishatta, outright conflict with the ILR does not start until the ILR attack on Dornthant II. During the intervening time between Derzon and Dornthant II, the only action an EDF unit would be likely to see would be counter-terrorism, counter-insurgency, and peacekeeping between local factions. While perfectly valid and interesting campaign settings, these types of operations generally involve small units, often of an *ad hoc* force structure, and are therefore not the focus of this supplement.

Structural Integrity is aimed at providing information and detail useful for the main conflict between the EDF and ILR, though the information is applicable to all campaigns in the *Albedo* universe. Characters are assumed to be part of a larger operation that they can influence by their success (or failure!) but that they do not (usually) directly control.

An *Albedo* campaign is not about *running* the show, it is about *surviving* it!

How We Fight

For the EDF, and to a lesser extent the ILR and independent worlds, after function, the most important characteristics of vehicles and equipment are interchangeability, redundancy and survivability. The first of these is practical, the second tactical, and the third economic. Even a lightweight asset like the ubiquitous AV-4 has autonomous routines that can bring it home through hostile territory, even if the entire crew complement is incapacitated. Or dead.

And while no one states it this bluntly, it *is* cheaper to replace the crew than it is to replace the vehicle. It is similarly unstated that no one likes the thought of their ride going home without them, and these autonomous functions are very seldom activated, even *in extremis*. While there is a general lack of superstitions among the various species, there is a certain irrational attitude towards vehicles put back into service after the death of its entire crew. These vehicles are, for lack of a better word, considered "unlucky", and for the most part, are disassembled and used as spares rather than simply being repaired and returned to service.

The Extra-planetary Defense Force specializes in rapid reaction, with an emphasis on lightweight, highly mobile forces. Characters are the forefront of this force. Ground forces are often light infantry and drop-ship-carried light armor. The heavy assets such as the Very Large Class Carriers (VLCCs) remain far away from direct conflict. The squadron of capital ships that invariably accompanies these nigh-irreplaceable assets forms both a defensible perimeter as well as the phalanx of the planetary assault. In general, computers can assess space battles to a very fine degree well ahead of any actual contact and may elect to withdraw without risking an engagement. The EDF is also an all-volunteer force, whose budget comes from the relatively stable supply of funds supplied by the ConFed member worlds. EDF equipment is manufactured by the EDF itself, usually at permanent resource stations that supply VLCCs or in the field as needed.

While the EDF mission is ostensibly to deal with *external* threats, internal political tensions have the EDF dealing with internal threats like insurgency, terrorism and well-organized campaigns of economic and political disruption. *Naturally, the ILR is only too glad to exacerbate these problems whenever they can.* Among the independent worlds, whose alignment with ConFed is a transitory affair at best, avoiding

civilian casualties and disruption of vital infrastructure is of paramount importance. No one in the ConFed or EDF wants a repeat of the damage done at Derzon.

The limitation of collateral damage combined with the lightweight nature of EDF forces leads to a dichotomy between space and ground forces. In space, ultra high velocity weapons with kinetic yields measured in kilotons and nuclear weapons are regularly deployed with no concern for the already-inhospitable environment. Orbital bombardment would reduce any military installation to rubble, but such mass destruction could lead to a short-term death toll in the thousands and environmental impact that could lead to the deaths of millions of civilians. On the ground, infantry, lightweight vehicles armed with point target weapons, and aerodyne gunships able to lay overwhelming precision fire into enemy troop concentrations, even in urban areas. Ground strategies and hardware are designed to minimize civilian casualties and collateral damage.

On the other side, the ILR military is a political, ideological and economic entity. The first two are linked. Lapine manifest destiny requires them to expand, yet they are hemmed in on all sides by occupied worlds mostly aligned with a militarily superior ConFed. To expand, they need military force *and* the political will to use it. ILR forces have a large degree of conscripts, and ILR hardware is built by corporate contractors (the lowest bidder). The ILR prefers wheeled vehicles for their lower initial cost and reduced maintenance and training requirements. Large-scale ILR operations draw people out of the workforce, though the draft usually targets the unemployed first, and ILR equipment funnels money from other government programs into corporate pockets. Any economic hardships caused by diversion of resources to the military are wrapped in patriotism. Complaining about a lack of a particular luxury or a type of rationing "while brave ILR troops are out there risking their lives" is blatantly unpatriotic.

The ILR is more concerned about generating the political response they want within the ConFed and independent worlds than they are about actually holding territory. The idea is to convince independent worlds to un-align themselves with ConFed, by showing that ConFed cannot do anything for them. It cannot protect them from the ILR, and the ILR just wants the independent worlds to bow out of the conflict entirely, which will tend to level the playing field. The ILR is largely unconcerned with civilian casualties or damage it causes to a planet's infrastructure. They are interested in getting the most political bang for the buck, which means taking control quickly, and making the EDF pay as high a price as possible to take the planet back, both in manpower and political influence. The ILR avoids costly assets that warrant an overwhelming response from orbit, and prefers deployments that can work *within* a civilian population. At the same time, they are not concerned with any damage they do during the defense of a planet. The ILR also prefers lightweight armored vehicles, as they are fast to deploy and relatively inexpensive, but the ILR may equip some of these vehicles with light artillery and mortars. However, they do not concentrate the vehicles for massed fire, as this is too easy to disrupt, nor can they coordinate fire over widely dispersed units due to the heavy EW environment. Instead, indirect fire vehicles are a long-range way of harassing EDF infantry, forcing EDF support units to be further from the front lines, and a force multiplier that can support ILR infantry units in widely separated locations.

For instance, it would not be beyond the ILR to park a few mortar carriers next to a hospital. Even fairly accurate fire from an aerodyne gunship could have enough dispersion to shred part of the building, and in case the pilot wants to get close enough for a few precise shots, there is often an infantry detachment present for just such an eventuality.

ILR troops are on average physically smaller than EDF troops. This limits the weight they can carry. ILR infantry weapons are lighter than EDF counterparts, and they make up for this by using them in quantity. ILR operational doctrine has a "rain of steel" feel to it, especially if you are on the receiving end. Rather than having all their forces equipped with a number of general purpose weapons like an under-barrel variable grenade launcher, ILR infantry has specialists for specific tasks. These specialists are the equal of EDF troops, even if the average ILR soldier is not, but there are far fewer of them to go around.

TECHNOLOGIES

ᔑᕮᕼᑎᖇᑭᐞᑕᕮᔑ

A World Without Baggage

One important thing to keep remembering about *Albedo* is that its inhabitants are a *created* people. They came into the world with their technology fully fleshed out, without having to take into account a moldering obsolete infrastructure. Buildings are assumed to be fully networked. Wireless, wearable voice activated computers are so ubiquitous that *Albedo* has reached the holy grail of being "paperless". There are no competing computer standards, conflicts between English and Metric systems of measurement, or any need to accommodate legacy technologies like analog phone lines, AM radios, obsolete weapon calibers or several different kinds of data storage media. Technologically, everything is as perfect as if it were made that way. *Which it was.*

Training and experts in a given field are generally involved with new ways to use *existing* tech. Scientific innovation is not nearly as developed as it would be for a species that had a history of technological development. For instance, personal electronics like hand computers have hardly evolved at all. The methods for making them are largely robotic, the program modules developed or supplied by the network. Creativity and innovation is in the form of new ways to use what is already out there. Moore's Law of exponentially increasing computer power does not operate in the *Albedo* universe.

There *are* incremental improvements, but they are slow, and may be as much driven (or limited by) economics as anything else. Aerodynes are powered by CAG fusion reactors. ConFed reactors are generally more powerful for their size than similar units on independent worlds. They are also more expensive. The independent worlds *could* make the better units, but the economic strain would not be matched by a corresponding increase in productivity, nor would increased performance for military aerodynes be worth the increased capital and maintenance costs. So while ConFed tech is slightly better than anyone else has, it is really just slightly better than anyone else *chooses* to make.

At this exact moment in *Albedo* universe, there is *some* genuine technological innovation. Trying to reverse engineer the technologies of the Creator ship found near Ahahn-Tako would be an example. However, the network, for its own reasons, may work behind the scenes to inhibit innovation in particular fields, by manipulating the fortunes of individuals who would otherwise be well-placed to bring about undesired advances (or advances with undesirable consequences!).

COMMAND REVIEW • ᐊᑭᑎᑎᐊᐞ ᑎᕮᖴᕮᑌᑭ

Our World vs. *Albedo's* Worlds

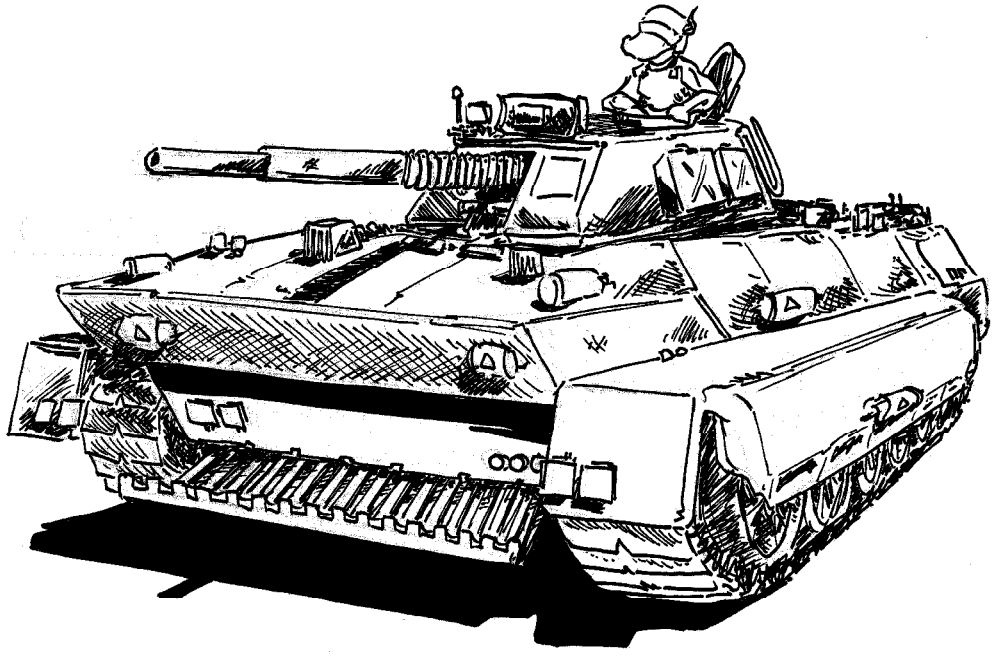
There are some weapons and weapon technologies that are not used in the *Albedo* universe. This could be because of genetic blind spots in the way the races think, or simply because their young military tradition has not gotten around to thinking of them.

Among the technologies you won't see used in ground combat by either side are nuclear, biological or chemical weapons, though enhanced radiation nukes are used in space combat, and irritant agents are available to but uncommonly deployed by the military.

The Skill of *Weapons of Mass Destruction* is primarily used to evaluate the effects of large explosions, orbital weapon strikes, and ACV strikes both for inflicting them on the enemy and surviving them.

Sonic weapons, poisoned weapons, exploding bullets, weapons designed to leave hard to find or remove fragments in tissue, and mine fields are also absent from EDF and ILR arsenals. Placed demolition charges *are* used by both sides, and the ILR does use tripwire weapons in the machine pistol class as booby traps. However, standard anti-personnel and anti-vehicle explosive mines as an area-denial tactic are not in use by either side.

Neither side deploys electromagnetic weapons like microwave beams or EMP devices except as immediate proximity devices, and even these are rare.



The nature of known history puts the EDF and ILR on par in terms of the equipment they use. However, the way in which the two equip their forces gives the EDF a slight increase in functional efficiency. While ILR experts can come up with equally useful designs, ILR weapons are in the end, manufactured for a profit by the lowest bidder.

On the other hand, the ILR *does* feel the need to have an edge, and is a little more willing to endorse experimental programs if they feel the result can be to tactical or strategic advantage, even if only temporarily. This means that EDF soldiers can never get complacent about who and what they think they're going to face.

Armor Tech

The standard armor material is a monomolecular composite that is grown by a standard electrochemical process that has been around since the beginning, though the discovery of the Creator ship shows that there are more advanced materials available. However, no one has managed to reverse engineer that ship's armor material to come up with a method to manufacture it.

Armor can be grown in virtually any size or shape, though flat pieces are easier to work with than curved ones, and simple curves are easier than complex ones. A VLCC can manufacture pieces of virtually any size needed, but also carries prefabricated slabs that can simply be cut into the proper shape for replacement of planar parts, like the glacis of the aforementioned AV-4. The basic characteristics of armor include a relatively low heat capacity, moderate thermal conductivity, a fairly low density and a fairly neutral reflectance of most forms of EM radiation. The way in which the armor is forged allows adjustments in its conductivity or EM absorption/reflection for specific uses. For instance, a ground vehicle will *reflect* radar in a way that matches "average" ground clutter as well as it can, while a military aerodyne will strive to *absorb* all wavelengths and be as EM stealthy as possible.

Armor is also specialized for particular applications. Exoatmospheric aerodynes may have heat-resistant coatings or structures, and armored vehicles may have reactive armor to help defeat shaped charge warheads. Personal armor is made from or is backed with advanced ballistic fabrics. Combined with monomolecular plates, it can blunt the impact of modern assault rifles, and can make heavier weapon hits more survivable.

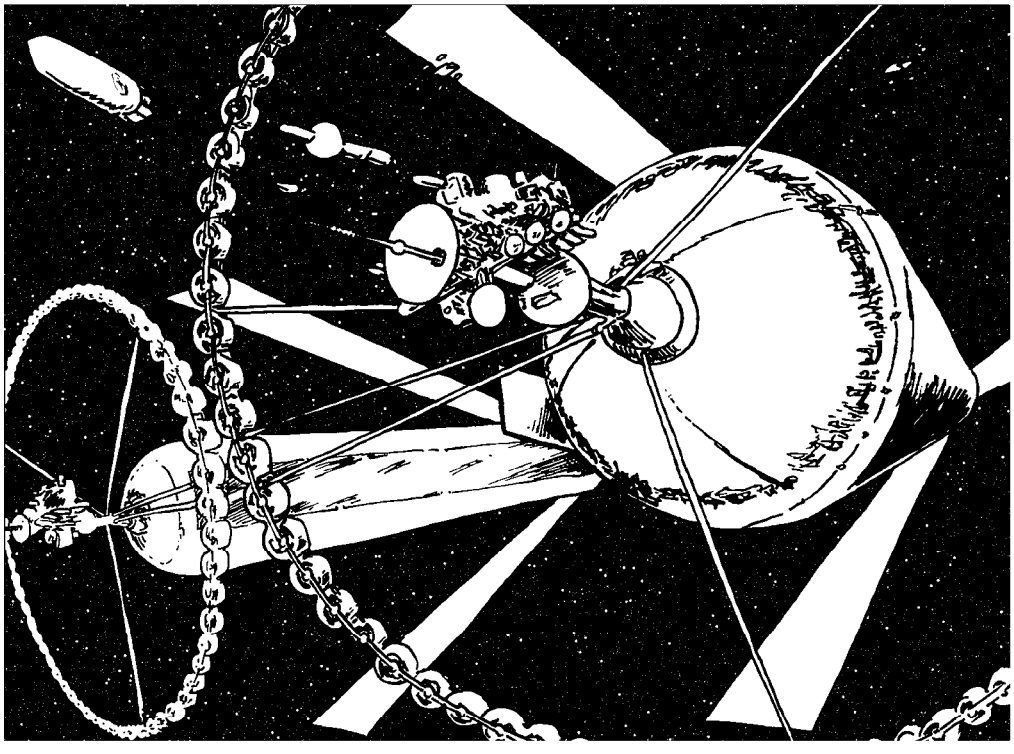
Weapons Tech

The battlefield of *Albedo* is fairly advanced, but the Game Host and players have to be aware that it is a fairly level playing field, and one in which certain measures and countermeasures are not in balance. For instance, when all troops have eye protection and basic armor that can provide limited life support, both blinding weapons and incapacitating gases are next to useless, and military planners usually reject them out of hand as a waste of resources. On the other hand, while both sides have extremely advanced computational, communications and networking capabilities, both sides also have significant EW (electronic warfare) assets, reducing the effective communication range of small units to not much more than shouting range. Though to be fair, over that limited range, both units and their equipment can pass, share and coordinate data in *extremely* effective ways.

The nature of technology in the EDF and ILR conflict makes heavy assets easy targets. Unless there is a toe-to-toe engagement in space that leaves everyone in orbit crippled or dead, one side or the other will have the high ground, and with that high ground, the ability to use orbital bombardment or aerodyne standoff weapons to obliterate any target that is tactically and politically worth the collateral damage such weapons will cause to an area. Both sides remember Derzon, and the nature of what the ILR and EDF are trying to do means that neither side has the opportunity, need *or* will to cluster heavy assets in such a way as to make mass destruction a viable option. There may be such static facilities on various worlds, but they would have been built before the first interstellar war. Now that people know what happens to such facilities when someone has orbital superiority, no one is keen to defend them once the high ground has been lost.

Consequently, most of the action is done the hard way: troops on the ground.

Ground weapons are nothing esoteric. Both sides use slug-throwers almost exclusively. The EDF uses a high-tech cased ammunition, while the ILR uses a less-powerful but lighter caseless cartridge. Heavier weapons like vehicle cannons will use metered liquid propellants, usually binary propellants, where neither component is explosive by itself, but only become volatile when mixed in the firing chamber of the weapon. The ammunition supply in a



vehicle will not explode and destroy it, even if it catches fire. Also, the mix of the propellant can be fine-tuned in the field, to compensate for barrel wear, humidity, temperature, gravity, atmospheric density, etc.

Weapon technologies generally *not* interchangeable between the ILR and EDF, mostly because the ILR doesn't want them to be. Military weapons as a rule will have integrated electronics. EDF rifles will almost always have light-amplification telescopic sights and heads-up displays to indicate threat direction and other symbolic information passed between a squad's local network. ILR weapons will not have electronics as sophisticated as their EDF counterparts.

Vehicle weapons are even more tightly integrated with their electronics. Fire control computers are the norm, as are stabilizers linked by computer to accelerometers, thrusters and even predictive models based on the pilot or driver's past behavior and assessed level of skill.

Guided missiles, smoke, irritants, and non-lethal weapons are also part of each side's arsenal, and if all else fails, the combat knife can be used. Bayonets are unknown.

On the largest scale, there are orbital bombardment weapons and ACVs. A direct hit by an orbital bombardment weapon on any armored vehicle will turn it into a pile of smoking parts that covers an area *significantly* larger than the original vehicle. Any static fortification can in time be reduced to rubble, and while ground installations can mount similar weapons capable of hitting orbital targets, ships in orbit can always withdraw and send in ACVs, which have the same effect on ground installations that orbital bombardment weapons have on armored vehicles.

ACVs (Autonomous Combat Vehicles) are the ultimate *Albedo* expression of "force equals mass times velocity squared". The "velocity squared" part is why a supersonic rifle bullet is so devastating compared to a relatively slow projectile like an arrow, and a heavy bullet of a particular velocity is more damaging than a lighter one. An ACV is a bullet the size of a truck, whose speed is measured not in meters per second but in tens or hundreds of *kilometers* per second. The kinetic energy of this "bullet" can be measured in kilotons or megatons, depending on how big it is and how fast it is going. Against a planet, it is like a non-radioactive nuclear explosive detonated at ground level. Against a capital ship, the impact, radial shock wave and conversion of momentum into heat will punch a white-hot hole 50 meters wide completely through anything but a VLCC, and spray molten metal and unrecognizable carbonized plasma out the other side. The defense against ACVs is to *not get hit by one,* typically by intercepting it with your own ACVs at long range, or disrupting its guidance system at close range with particle beam weapons. This is easier said than done, since ACVs are simply chunks of metal with a thruster and guidance module. Unless you actually hit its sensors, the heavy metal nose can absorb anything short of a hit by another ACV.

Unconventional Warfare

The benefits of a fully-networked high-tech army such as the United States touts in its Future Force Warrior concept really only works if your opponent *doesn't* have the same tech base. In *Albedo*, both the ILR and EDF operate on a more or less equal technological footing, though they operate in different ways. One important unconventional warfare asset is electronic countermeasures. The first thing to go in any military situation is long-range communications. Vehicles can and do carry equipment that can easily punch a signal through to an overhead orbital vehicle or to any other vehicle within several kilometers (who then relay it further as needed). Units within line of sight can often communicate via coded laser pulses, and while these cannot be jammed, atmospheric scatter can be used to detect the position of any laser transmitting unit. Units without vehicles have a much greater difficulty because powerful comm gear is not light and light gear is not powerful. Individual radios have a huge range under ideal conditions but under battlefield conditions can only reliably reach 50-100 meters while the officer radio is only good for about 500-1000 meters.

Company HQs and platoons who are not motorized have a communications expert to carry a more powerful radio system. This is not quite as good as a vehicle radio but it can punch tactical updates and orders out and receive them back every few minutes over the vehicle ranges. This is also a platoon or company's link to aerodyne support.

Whichever side in a conflict has the orbital high ground can blanket an area larger than the biggest metropolis with scrambling signals that render all but short-range communicators useless. When the ILR holds an area, they immediately co-opt the local broadcast net (mostly the equivalent of cellphone towers) to do the same. The EDF could counter this jamming, but only at the cost of destroying the entire civilian communications infrastructure, plus the businesses, government buildings and residence complexes that have this equipment mounted on their roofs.

The net result is that high-speed data communications are limited to a range of a few hundred meters in any combat zone. The slightly more powerful radios a squad leader has can reliably pass data this far, and with a tactical computer, an *ad hoc* network between adjacent squads can pass messages from one end of a chain to the other, but the limited bandwidth available keeps this from being an "open channel". Individual squad members would have to pass requests to their squad leader, and if more vital communications are not in process, pass a request or communication down the line.

Medical Tech

Anything short of brain destruction can be fixed, eventually. Virtually anything in the torso can be regenerated, and missing limbs can be replaced by cybernetics that perfectly mimic function and appearance. There is no drive to use cybernetics or other forms of enhancement to increase function beyond normal levels — part of the same cultural ethic that does not allow use of combat robots, a desire to keep things from becoming a biologic adjunct to a combat machine.

Cybernetics are shielded to prevent electronic detection and to prevent them from being affected by EW to the same degree as other military electronics, but they can be readily detected at contact range as easily as any other chunk of structural monomolecular material.

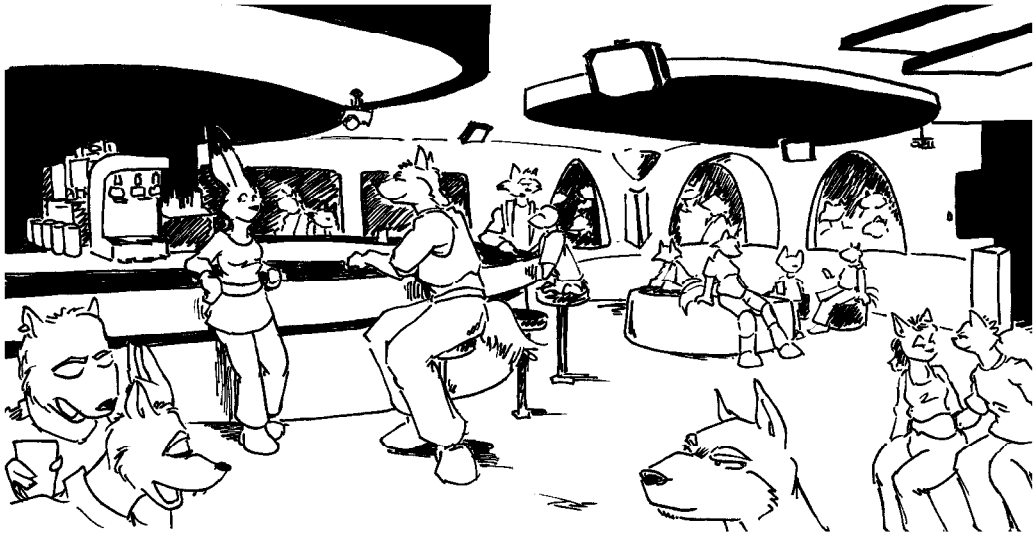
Medical technology can and *has* been abused, mostly by independent organizations or the ILR. Virtual reality interfaces can provide sensory input nearly indistinguishable from the real thing, allowing for torture that leaves no physical marks but that still scars the mind for life. Life support packs can put healthy people into comas, and there are drugs that can, if not countered, permanently disassociate the neural linkages that are our personalities, skills and memories. Just because these are horrible things to do does not keep them from being done. It just keeps them from being *common*. Fortunately, instances of abuses like this are virtually unknown within the Confederation.

Robotics Tech

Since the network is smart enough to be an artificial intelligence, robotic behavior is fairly sophisticated. Robots can be used for automated deliveries, ship maintenance, Explosive Ordnance Disposal (EOD) work, hostile environment exploration and so on. While capable of operating autonomously for many tasks, robots still work best under skilled direction (i.e. a Robotics Expert). In the EDF, EOD and other specialized robots are battalion-level assets.

Social Tech

Albedo is full of highly social species that by and large like to mingle. The diversity of species means that opportunities to mingle with one's own species are more limited, and extremely welcome in most cases. The personal hand computer that no one would dare leave home without serves the function of communications, network access, day planner, address book and personal entertainment device. Either with a hand computer or a building or ship's internal network, it is easy to look for people with a common set of interests, or post a specific profile that other people can look for. So, a passenger on the boring trip out to the hyperspace limit can either mingle the old fashioned way, or they can ask the Net, "Are there any unattached ungulates who



wouldn't mind some friendly company for a while?" Within seconds, a listing of how many there are and where they are on the ship at the moment is available. This search can be scaled to a city, or even a planet, and then fine-tuned to reduce overwhelming responses down to a select few.

Extreme Tech

The two most obvious examples of extreme technology in *Albedo* are capital ships and gravity-wave detectors. VLCCs are small cities, with virtually everything one would find in a groundside facility. With a crew of 5,000 and the ability to drop an entire division of infantry and support vehicles planetside, they are an investment of resources that neither ILR or EDF risks in combat. Even lesser capital ships are extremely valuable assets. An unwritten rule of the service is that a captain who loses his or her ship doesn't get another one — at least not one as large or larger.

Gravity-wave detectors are the main long-range sensor available to starships and orbital installations. Jumping into local space is the sudden introduction of thousands of tons into local space, with a pronounced tug in the local gravity environment.

As the ship moves through space, it creates gravimetric ripples which can be detected. Bigger ships or stations with larger/better arrays can get a better fix at longer range, but even a smaller ship can detect a ship jumping at a range of several AU. Smaller objects like an ACV can't be detected easily, even at shorter ranges.

A gravity-wave detector is simple in principle, but everything needed to make it work is complicated, large, and expensive. At its heart, a gravity-wave detector is a spinning, ultra-pure mass of quartz, somewhat less than a meter across. Any stress on the quartz generates a tiny piezoelectric signal, which can be measured by sensors surrounding the chamber it is housed in. The introduction of new mass into local space generates gravitational ripples which cause minute stresses in the quartz. Correlated with the rotation rate and position of the quartz at the instant of detection, this gives a rough bearing and distance to the source of the disruption. Similarly, the movement of existing masses within the radius of detection can also be measured.

COMMAND REVIEW • ADVANCED DEFENSE

Observation and Distance

With *Albedo's* technology, inside a solar system, there is no detection system that works faster than the speed of light, and there is no weapon or delivery system that travels faster than light. This quirk of physics means that at large distances, you can't know where something *is*, just where it *was*. For example, if a ship is detected at a distance of eight light-minutes (about 1 AU), that's where it was *eight minutes ago*. Space combat involves a lot of stealth, prediction models, and just a little luck.

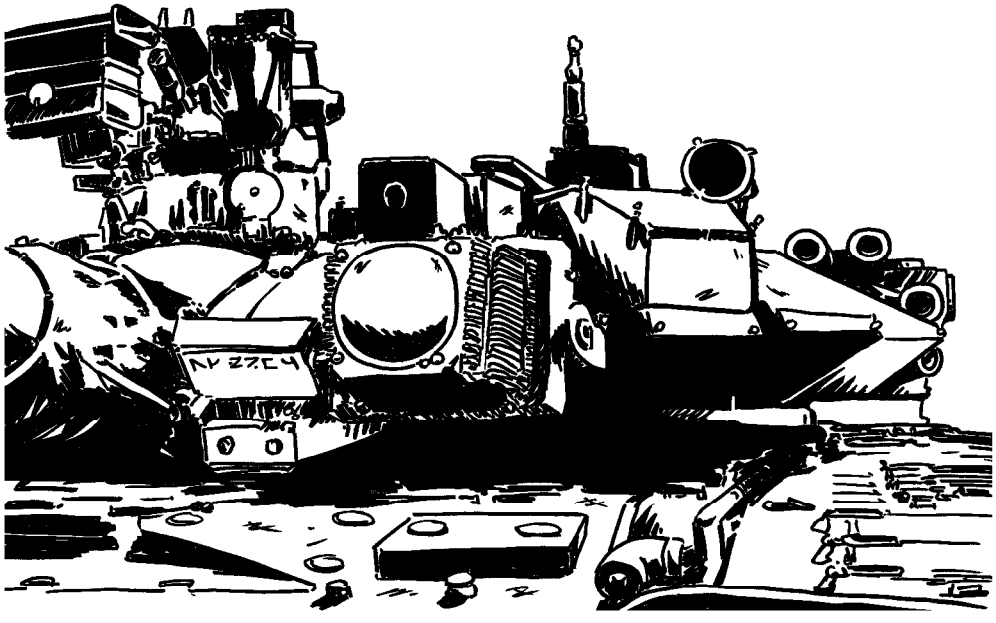
The trick is to do all of this in a ship under varying acceleration, in the radiation environment of space and heavy EM environment of a ship's reactors and other electronics. The gravity sensor has to be heavily shielded, cooled to absolutely constant temperatures near absolute zero, and even then, a ship usually has to stabilize its own acceleration profile for a few seconds to take a reading. It also helps if you have a gravimetric database of the solar system in question, just so you can isolate and rule out all the existing bodies in your sensing range.

All capital ships will have at least one gravity-wave sensor, and larger ones will have several. This improves the range, the precision and the mass discrimination. Planets and large orbital stations will have many sensors set tens or hundreds of kilometers apart. A planetary array can spot ships (especially jump events) out to about 5 light-hours. Capital ships can spot out to about 1 light-hour.

The size and complexity of an array also determines how mass-sensitive it is. A large array has a sensitivity of perhaps 100 tons per light-minute of range, a large ship's system might be 300 tons per light-minute and a minimum system might be 1,000 tons per light minute. A planetary array could spot the arrival of a ship 30,000 tons or larger at maximum range (36AU), while a large warship's array could pick up an 18,000 ton ship at its maximum range (7AU) and a minimum system could pick up a 60,000 ton ship at the same range. The mass discrimination ability is the same as its minimum detection mass at a given range. So, a planetary array at a distance of 20 light minutes (sensitivity of 2,000 tons) could determine the mass of an item to within 2,000 tons of its actual mass.

There is no known method for hiding gravitational signature. While radio silence can be maintained, and fusion reactors can be shut off, mass still has gravity. Even if stationary, a mass will be moving relative to the detection array, so it will still be detected.

Major ConFed worlds and a few of the more well-heeled independents have gravity-wave "transmitters". Think of it as an array of 30,000 ton semaphore flags. Actually, configured chunks of nickel-iron asteroid with high-acceleration engines, a sort of super-ACV. Their position and velocity relative to each other and their home planet can be used to send low-bandwidth messages to any ship capable of detecting them. It is cumbersome, but it serves much the same purpose as Earth's ultra-low frequency transmitters for sending messages to submarines. It is an unjammable means of quickly getting short, coded messages to military units faster than is possible by any other means.



VARIANT RULES

FANTASY RULES

The basic *Albedo* rules cover all the really important bits of the world and the way things work. The following Variant Rules clarify and expand on the core rules. As with all Variant Rules, use these to enhance the drama of the game, not to complicate issues.

Variant Rule: **High-Ranking Officers**

The basic rules are not perfectly clear on how a starting character and supporting characters are integrated into a service, the Table of Organization and Equipment (TOE). How the Main Character and Supporting Characters fit in depends on where you start in the rank structure. If you start off as an O6, there's no problem. You are leading a fire team and your 4 supporting characters are the members of that fire team.

The basic rules sort of assume your character will start as an O6 or S3, an Independent Fire Team Leader with 4 cadet ranks (Cadet 1st through 5th) as your supporting characters. In the Surface Battalion TOE, this position is only available in Air Recon (Rapid Response) though it is common for Freefall Infantry teams, the Administration Branches, and Specialist Branches. Surface Branch officers may also be Independent Fire Team Leaders when serving as security, Homeguard trainers and advisors, or when circumstances leave the EDF shorthanded. The Game Host will need to take these factors into consideration when advising players on character construction and when designing a campaign.

However, it is quite possible (and often preferable) to start as an O7 (squad leader) or even O8 (platoon or wing leader), which puts an entirely different cast on things.

As a Squad Leader or aerodyne pilot, all the members of your squad/crew are your supporting characters, which means that for an 8 person squad you will have 7 supporting characters for an O7 main character. This situation is actually fairly common.

If you *start* as an O8 platoon leader, you may either have the four squad leaders in the platoon as your supporting characters (all O7's) who will in turn have their own supporting characters (the squads) or 3 of the squad leaders can be Main Characters and the remaining squad members are your supporting characters. The former is *not* recommended for combat units but works well for support positions in Surface Branches and in all Specialist and Administrative Branches.

If your start as an O8 flight leader, you will have only your vehicle crew as supporting characters because all aerodyne pilots are Main Characters, whether other player or Host controlled.

You may also be promoted to Company/Squadron Commander or even higher. In all cases of higher advancement, the supporting characters remain the immediate command staff and other leadership positions are Main Characters under other player or Host control.

In all cases of rank above Fire Team Leader, however, an officer will need subordinate officers that are capable of some degree of independent action and while not quite Main Characters, they do need more capabilities than a standard Supporting Character.

Adjutant Characters

Collectively, all lesser officers who are not Main Characters will be referred to as *Adjutant Characters*. Most officers of O7 rank or higher will have 1 Adjutant but some may have more. The TOE lists each unit type and the required minimum rank of the various positions. In most cases, this position is called the *Assistant Squad Leader* (ASL).

An Adjutant is built like a Main Character with certain exceptions. The first exception is that they have no Homeworld skills or gifts (but can take them as improvements). They also have only 1 initial free mark per rank level over O5 or S2 (an O6 or S3 would have 1 free mark), not the 10 that normal Main Characters receive. All Adjutants also receive 1 free mark in Lead, and since Main Characters are not *required* to have Lead marks in order to hold a command, the

Adjutant might have *more* Lead marks than the Main Character. An Adjutant *does* get a Free Gift. An Adjutant is assumed to have the minimum SPI needed for the rank to do their job and the minimum ranks are listed under the squad type. However, an Adjutant will never have less SPI than Clout + Drive + Personality + Gift modifiers, nor will they ever begin the game with greater rank than the main character (though they may have the same rank in a different Branch in some cases). Adjutants use the Main Character experience track and can improve all marks, attributes, and SPI normally.

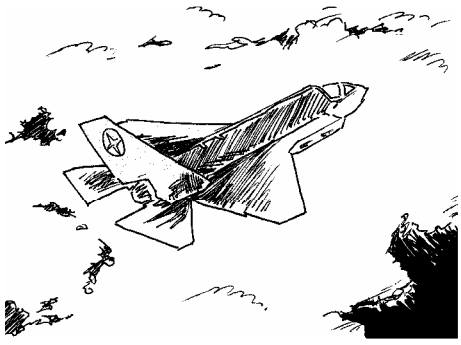
EXAMPLE

Example: As a 2nd Lt, Auitzotl would begin a campaign in charge of a squad, meaning he would have an Assistant Squad Leader (ASL) built using the Adjutant rules and 6 other supporting characters built using the Standard Supporting Character rules (see below). Auitzotl chooses Oshi as his ASL. The mini-mum rank for an infantry squad ASL is Cadet 1st class, so Oshi's minimum SPI is 15 (a corporal equivalent). His actual SPI is his Drive + Clout + Personality + Gift modifiers. Oshi is a Canid and neither his species nor his free Gift affect his SPI, so his SPI minimum is adjusted to 20. This means he is an O6 (3rd Lieutenant). Because of this, he gets a free skill mark in addition to the +1 Lead mark that all Adjutants get.

Most players will note that Canines are the species most easily made into 3rd Lt ASLs. This reflects the source material.

It is possible for Supporting Characters to be promoted to Adjutants , using the Variant Rule "Supporting Character Experience System" or Game Host fiat. If a supporting character is promoted to an Adjutant, that character resets their experience track to zero but immediately gains the Free Gift and use of Clout and Drive, including that from Personality. They do not get the free mark(s) (even Lead). The SPI rating is *not* changed for the gift or personality if the promotion is SPI (merit) based. If the promotion is by Game Host fiat (see below) then the SPI is adjusted to the *minimum* level necessary for the rank.

Adjutants can have their own Supporting Characters and in fact, this is usually the



point at higher command levels in the non-combat branches. The Adjutant directs their subordinates using their abilities, but under the main character's command. Adjutants will even have their own Adjutants at higher ranks! However, combat unit Squad Commanders and higher should always be Main Characters in level of marks and gifts even if played by the Game Host. Experienced Adjutants may meet this qualification through accumulated Gifts and skills.

Supporting Characters that a Main Character controls through an Adjutant will start the game with Trust towards both the Main Character *and* Adjutant.

Trust in the Adjutant translates into trust in the Main Character. However, loyalty does not translate through the Adjutant except within a squad or flight.

EXAMPLE

Example: Loyalty to a fire team leader translates to the squad leader, but loyalty to the squad leader does not translate to the platoon leader.

Characters who are loyal to a Main Character at the point an Adjutant is "inserted" between them and the Main Character (through promotion for instance) *will* retain their loyalty.

Note that character can get a promotion without getting a higher level of command if they are not otherwise eligible or it no command is available. Often, a promotion does not actually entitle one to a higher command level. In these cases, one might be tapped to be a 2nd in command but this position can be turned down if desired.
A question about in-game promotion is "what happens to my Supporting Characters?" If you are promoted from a fire team leader to a squad leader, this is no problem, a squad is simply formed around you.

You gain 3 new supporting characters (who are Neutral towards you), one of which will be an Adjutant (your ASL) unless one of your fire team members is eligible for promotion to ASL (if they are a Cadet 1st class or better) in which case that Cadet (who must be the highest ranked Cadet) becomes the ASL.

However, if you get bumped up to a platoon command or to flight commander, the situation is more complicated and will have to be worked out with the Host. For combat commands of Platoon level and all aerodyne commands, the character keeps his or her squad/crew and the other squad leader/crew leader spots are filled by Main Characters. These Main Characters may be new faces who may not know you or people you have worked with before. The Main Characters could be controlled by the Host or (preferably) by other players.

Main Characters who are commanded by a Player Character are still controlled by the Game Host. Such characters do have to obey the commander's orders but there is no guarantee they are going to like the commander. Their personalities may let them develop trust in the commander, but it is possible their loyalties lie elsewhere. All sorts of interesting permutations are possible. This situation is a very good chance for role playing as well as a call for some creativity on the part of the Game Host.

For non-combat platoon level commands, the ASL becomes one squad leader and the Main Character receives 3 new Adjutants who are the leaders of the other squads. You design and control these characters as your own. However, they and the men and women they command as their supporting characters are Neutral to you initially.

All combat squad leaders (and Independent Fire Team Leaders) and all platoon leaders and higher are Main Characters in all EDF branches. This high level of competence is the primary strength of the EDF. When a character advances to higher commands, he or she will form a command staff (a command squad) or an administrative staff (squad) which he or she will carry with them as they advance in rank and command level. When this HQ unit is first formed, most of the members will likely be new to the character but the Main Character can take his or her ASL and any other supporting characters who are qualified for command positions into the HQ unit.

It is very possible that promotion to Company commander will sever any direct connection with most of a Main Character's original subordinates (that is, they will no longer be actively controlled in the field).

The EDF strongly believes that the behavior and abilities of subordinates reflect the abilities of the commander. Therefore it should be a condition of promotion from Squad Leader to Platoon Leader that one's ASL is ready for promotion to squad leader. This rule encourages players to 'help' the ASL along and applies all the way up the chain of command. Note that a character can get a promotion in rank without a promotion in command, however. A Lt Commander can lead a Platoon for instance.

On a possibly more sinister note, promotion is tied to SPI and SPI is tied to personal behavior to a significant degree and therefore to conformity of some level. Tying promotion to the promotion eligibility of

one's subordinates encourages officers to monitor the behavior of subordinates for anti-social actions.

If combat casualties or promotions or force reorganization opens a vacancy that someone *has* to fill, there is another option for advancement. The Host may assume that a "rising tide floats all boats". If a commander at a certain level gets promoted or removed from action, *someone* has to take his or her place. Ordinarily it is EDF policy to promote from within if at all possible, especially in the heat of battle. Promotions (and SPI awards) are simply made as necessary (with the rule being the least SPI given out free the better) to arrive at a workable new command structure.

These SPI are 'loans' however and any SPI that the character earns first have to go towards 'paying off' the loan before the character's SPI can increase again. If anything happens to cause a loss of SPI while the 'loan' is outstanding, the promotion and SPI loan can be revoked.

EXAMPLE

Example 1: Auitzotl is a squad leader with some experience and an SPI of 38. His ASL Oshi began with an SPI of 20 and now has 23. Auitzotl's platoon takes some major punishment and the platoon leader is KIA. Someone has to take over the platoon. The other squad leaders have less SPI than Auitzotl, so he gets tapped for platoon leader. He gets a +2SPI 'loan' so he is eligible for the promotion and his ASL Oshi gets +7SPI so he can become the new squad leader. If both do well (don't lose any SPI), eventually, they will be 'confirmed' in the new position (once they have earned enough SPI to pay off the 'loan').

Under ordinary conditions, Auitzotl would not be eligible for promotion to platoon commander until he has 40 SPI and Oshi has 30 SPI. Auitzotl is therefore very interested in the career of his ASL, which is exactly what EDF wants.

EXAMPLE

Example 2: Auitzotl has worked hard and had a successful career. His promotion to Platoon Leader was eventually confirmed and he has accumulated 55 SPI. He is ready for promotion to Lt Commander but nobody in his platoon has 40 SPI yet, so he has no replacement and is therefore 'stuck' at Platoon commander until someone is eligible to take his place.

Eventually, squad leader Hodochi reaches the magic 40 SPI. Auitzotl gets the next company command slot. This may be his existing company or it may be an entirely new company formed from units new to Auitzotl. In either case, Auitzotl forms a new HQ squad. He keeps Oshi with him as his HQ squad ASL (which may 'force' a promotion in his old squad) and he takes Zyshiri as his aide. His other squad members are not eligible to fill any other slots in the HQ squad and are 'lost' and replaced with new ones. They may be encountered later as a game event but they are not part of what Auitzotl does in the game. Except in an emergency, Auitzotl is no longer a direct combatant. If the company is his old company, any Main Characters remain. For either old or new, all other platoon slots are filled by Main Characters controlled by either another player or by the Host.

Summary of Ranks

It is important to remember that all EDF surface personnel are technically 'officers' but most are confined to the Cadet ranks (O5 and lower) and will stay there for the duration of their enlistment. They do not have the necessary 'drive' (literally) to be a command grade officer. The Warrant Officer ranks apply only to Emissary, Exploration, and Research & Design fields.

Remember that you and your supporting characters do not have to be the same officer type. Some can be regular officers, while others can be warrant officer ranks. In order of SPI, here are all the Surface Ops ranks on one table:

Grade	Rank	Min. SPI
O16	Chief of Surface Operations	240
O15	General	200
O14	Brigadier General	160
O13	Sr. Commander 1st class	130
S7	Master Warrant Officer	120
O12	Sr. Commander 2nd class	110
O11	Sr. Commander 3rd class	90
S6	Chief Warrant Officer	80
O10	Commander	70
S5	Warrant Officer, 1st class	60
O9	Lieutenant Commander	50
O8	Lieutenant, 1st class	40
S4	Warrant Officer, 2nd class	40
O7	Lieutenant, 2nd class	30
O6	Lieutenant, 3rd class	20
S3	Warrant Officer, 3rd class	20
O5	Cadet, 1st class	15
O4	Cadet, 2nd class	10
S2	Warrant Officer, 4th class	10
O3	Cadet, 3rd class	5
S1	Warrant Officer, 5th class	5
O2	Cadet, 4th class	3
O1	Cadet, 5th class	1

Standard Supporting Characters

To clarify the basic rules: All personnel are Player Characters, Main Characters, Adjutant Characters, or standard Supporting Characters. Main Character generation is covered in the basic rules and Adjutant Characters are detailed previously. The procedure for Standard Supporting Characters is outlined here for clarity.

Supporting Characters have a Species with appropriate skill marks and species gift, a Homeworld (though they do not get Homeworld skills or gifts, they may take them later as improvements), a personality (which has no game mechanic effect unless the character gets promoted to an Adjutant), and Body, Drive, and Clout ratings based on their species and species gift (only).

The Drive and Clout have no game mechanic effect (unless the character becomes an Adjutant) except to limit Base Morale (see below). Body is used to determine thresholds in the usual way and is expended for certain exertion activities (detailed elsewhere). Standard Supporting Characters have a Recovery of 10.

Standard Supporting Characters have Morale which they use for Pushing, Risking, Retrying, and other skill modifications and which they lose when they take Awe. This Morale consists of a Base Morale which is inherent to the character, recovers like attributes, and which may improve with experience. EDF personnel all begin with a Base Morale of 1. Civilians with no military or stress training in their background have a Base Morale of 0. Some poorly-trained troops (such as local militia) may also have a Base Morale of 0.

Standard Supporting Characters have an SPI rating equal to Species Clout plus Species Drive plus Species Gift modifier (if any).The character's rank is based on this SPI score. They may gain or lose SPI through play but this will be rare.

Standard Supporting Characters have a Service and Branch which provides them with Gifts and Skills just like Main Characters.

Supporting Characters who 'belong' to a Player Character have an additional +1 skill mark in any skill. This is a bonus to allow PC-controlled Supporting Characters to be a little more interesting.

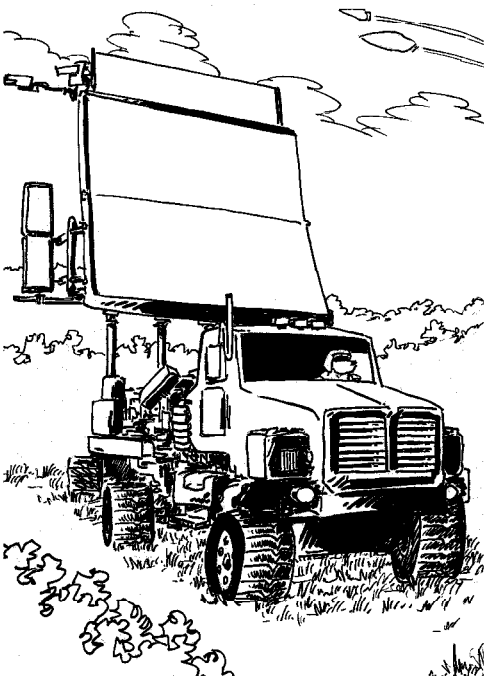
As a further variant rule: Supporting Characters of a PC may have their wounds and other damage effects tracked like Main Characters. This allows them to return to action from minor injuries much faster but makes them much more subject to trauma and major injury.

Supporting Character Guidelines

A collection of supporting characters should show personality and variety. Coolness Under Fire is the best gift by far for beginning combat characters but too much 'cool' is boring. No more than half of all Standard Supporting Characters in any unit should begin with Coolness Under Fire (though it is okay for all to get it eventually with experience).

More than any other MOS, Infantry must be able to handle the physical demands (see "Carrying Capacity", p. 229) which in practical terms means that a Body of 7 is the absolute minimum for Supporting Characters and even that will not work for all MOS.

Supporting Characters (Adjutant or Standard) in the surface branches and aero-



dynes should use the Military Occupation Specialty (MOS) character design system listed under the TOE rules (q.v.). Main Characters can use the MOS charts or the charts from the basic rulebook.

Other Supporting Character Notes

The sample supporting characters on page 162 of the basic rules give the important stats, but as the note at the top of the page says, it does not take into account species particulars.

These sample characters are *not* to be used as supporting characters for Main Characters. They are simply convenient profiles for encounters a player character may have. The sample supporting characters assume significant experience in most cases and in order to build them, the Supporting Character Experience system must be used.

Supporting Character Experience

Standard Supporting Characters use the experience track, just as Main Characters and Adjutants do (see page 135 of the basic rules). However, Supporting Characters get different improvements.

For a Low Improvement, a Supporting Character may either gain +1 Mark in any Homeworld skill (but only once per skill!) or gain +1 Base Morale or +2 SPI. This means that at this point, you may have to add some detail to the Supporting Character (the nature of their Homeworld).

EXAMPLE

Example 1: Deras is entitled to a Low improvement. He is from a Rural world. He can take a +1 Base Morale, a +2 SPI, or a +1 in any Rural World skill. He chooses +1 Scrounge. He cannot ever take another +1 Scrounge as a Low Improvement but he could take a +1 in another Rural skill as a Low Improvement.

EXAMPLE

Example 2: For a Medium Improvement, a Supporting Character may either gain +1 to any Service or Species or Homeworld skill in which they have no more than 5 marks or +1 in any skill which they already have at least 1 mark but no more than 3 marks or +1 Leadership or gain +2 Base Morale or +4 SPI.

EXAMPLE

Example 3: Deras is entitled to a Medium Improvement. He considers several options. He could take a +1 Heavy Weapons (a service skill in which he has 5 or less marks), +1 Scrounge (a Homeworld skill in which he has at least 1 mark because of his Low Improvement), +1 Spot (in which he has 1 mark, which is less than the 3 maximum), or +1 Leadership, or +2 Base Morale or +4 SPI. Deciding he is not really the leader type, he forgoes the officer training seminars and concentrates on his Scrounging for another +1.

EXAMPLE

Example 4: Deras is really experienced and is entitled to a High Improvement. He took Tough as his original species gift for being an Ursine. He takes Very Tough as his improvement.

For a High Improvement, a Supporting Character has access to the same improvements as a Main Character or Adjutant or +4 Base Morale. *Hey, if a supporting character makes it through 18 missions, he or she deserves a generous reward!*

SPI and Career

SPI gains are important, as they can allow Supporting Characters to eventually be promoted. And, bringing out the best in your subordinates (qualifying them for promotion) looks good on a Main Character's record when *they* are being considered

for promotion! In fact, is it often essential for promotion to a higher command level.

Albedo is not about personal combat competence. *It's really about being a good leader.* A Main Character who is a combat monster at the expense of leadership ability will come out on the short end of the stick compared to a moderately combat-competent Main Character who can get their Supporting Characters to work to their full potential.

Morale

The basic game deals with morale in a simplified manner which does not accommodate for more experienced supporting characters.

Base Morale is the morale a Standard Supporting Character has that is independent of any outside source and which recovers on its own just like character stats. Most SSCs start with a Base Morale of 1. Civilians with no military or similar stressful background will have a 0 as will poorly trained troops, especially young ones.

Base Morale can be increased with experience but cannot exceed the *lowest* of Clout or Drive (species base modified by species or other gifts).

Bonus Morale is a modifier to Base Morale that applies when the SSC is under the command of someone they trust or are loyal to (only one bonus or the other applies). An SSC under the command and control of someone they Trust will have a +1 bonus while someone under the command and control of someone they are Loyal to will have a +3 bonus. This person can be anywhere in the chain of command so long as the character believes that that person is looking out for them.

Planning Expert Morale Bonus is a modifier to Base Morale, only applicable once per mission, that results from the SSC being briefed for an operation by someone with the Planning Expert Gift. Trust and Loyalty are irrelevant though both bonuses may be taken if both are applicable.

Ribbons and Medals

Also known as "fruit salad" or "chrome", for the most part, medals are bragging rights, rites of passage and symbols of recognition that someone else went through the same hell that you did. In game terms, any Medium or High Improvement that increases SPI can be accompanied by a medal.

There are four "valor medals", which range in criteria and rarity from about that of the United States' Bronze Star at the low end to the Congressional Medal of Honor at the high end. Valor medals are requested by a soldier's immediate superiors (one or two grades up), but may also be referred to the appropriate Admin personnel by analysts preparing post-battle reports, where it is clear in hindsight that a particular action or actions were key, and "above and beyond".

Meritorious Conduct Medal

For "bravery above and beyond the call of duty" or "duty under exceptional circumstances". For this and the other valor medals, keep in mind that the *normal* call of duty and *expected* level of bravery involves getting shot at and keeping a cool head while it happens. The circumstances that lead to the award would involve significant risk to the recipient, and had a measurable effect on the local battle, saved a life, or both. It could also be awarded for managing to perform ordinary duties under extraordinary circumstances.

Legion of the Blue Star

Awarded for "outstanding achievement carried out with exceptional bravery". It is for a battle-changing or multiple life saving action under extraordinary circumstances.

Legion of the Nova

This is for "outstanding achievement affecting the outcome of a campaign" or "an act of exceptional heroism making multiple outstanding achievements possible". This award is relatively rare and usually goes to the leader of a group that turns the tide of a battle or campaign through an exceptionally difficult accomplishment.

Legion of the Nebula

This is the highest valor award, and the most likely to be awarded *posthumously.* It is awarded for "outstanding accomplishments which affected the course of a campaign or war and which were undertaken and accomplished with little or no expectation of survival". Living recipients are

usually individuals, though posthumous award is sometimes given to entire units (like a starship crew).

The amount of time between the heroic deed and an award is proportional to its importance. The Legion of the Nebula might not be awarded until years after a war is over. It is also true that politics can play a part in the awards, especially if there was significant media coverage of the heroic event as or shortly after it happened. Everyone likes to rub elbows with a hero.

There is only one bullet's worth of difference between an idiot and a hero. The EDF does not rewards heroism by itself. There has to be an accomplishment in there somewhere, and it is generally not medal-worthy for a person to do heroic things that simply make up for the consequences of their own previous bad decisions.

Distinguished Service Ribbon

The DSR is for non-combat contributions to a battle beyond the normally expected level of accomplishment. Veterans call this the "Desk Sitting Ribbon", and Admin personnel seem to recommend each other for a lot of these. Combat troops don't grant much importance to these, but they are sought after by Admin types for their personnel files. Between otherwise equal candidates for Administrative promotion, DSRs can make the difference.

Wounded in Service Ribbon

This is also called a "Red Star" and simply signifies the recipient has been wounded in battle (lost 1 or more Body due to enemy action). It is the equivalent of a United States Purple Heart.

Direct Combat Badge

Referred to as the DCB, it signifies that the recipient has been in at least three battles or campaigns where they were under enemy fire, with the usual implication that one performed up to EDF standards in those circumstances. This is the dividing line between green troops and "veterans". Until you have a DCB, you're the "new guy", and certain informal gatherings or rituals may be off-limits. Those without the DCB also tend to get the worst duties, like "New guy, you're on point today..."

Campaign Service Ribbon

The CSR is the only ribbon that doesn't require more than just "being there". Every major campaign will have its own CSR, and virtually everyone taking part in that campaign will get one. CSRs for particularly bloody or important campaigns will have more cachet than "easy" or obscure ones.

Unit Citations

The EDF does not personalize its hardware. Loyalty is to the EDF and one's brothers-in-arms, not to a particular vehicle or organizational division. There is no tradition like the "82nd Airborne" or specialized badges for the "USS Nimitz" or nose art for a bomber crew. Both EDF and ILR rather unimaginatively give their vehicles and units bureaucratic alphanumerical designations, and leave it at that. The only time units are recognized as a whole is for things like the Legion of the Nebula, and even then the emphasis is on the crew as individuals, not that they were the "crew of DL-1121-3".

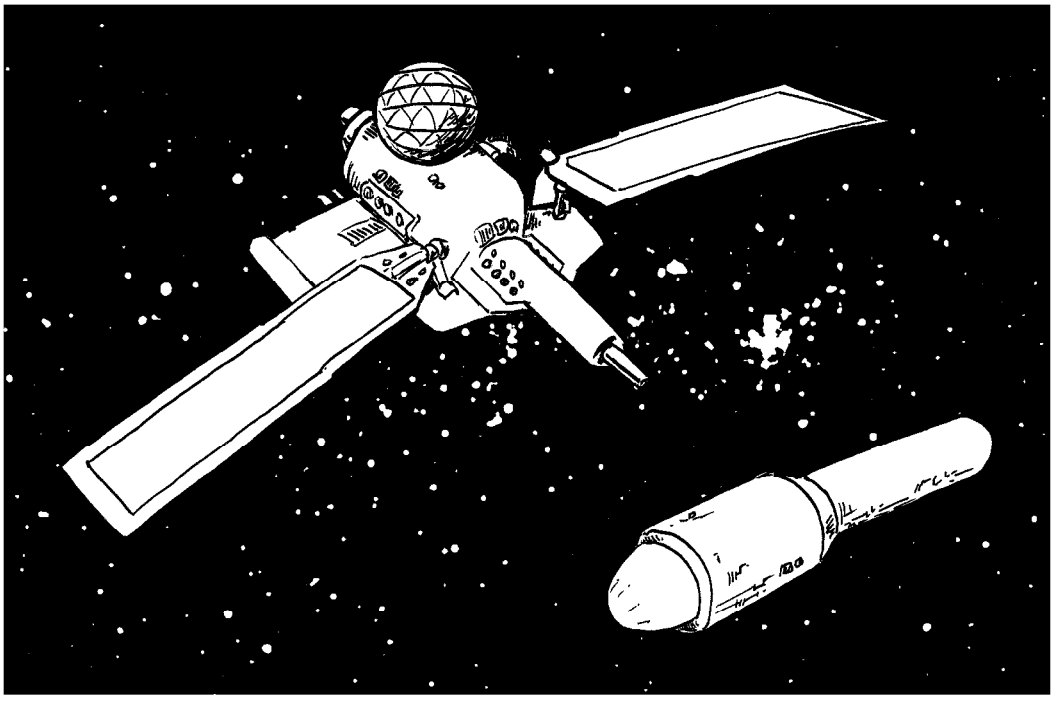
Awards in Play

Awards are generally a *personal* thing, known to a character and their companions. They are in the record for anyone to see, and might be mitigating circumstances in certain disciplinary actions, but the awards themselves are generally only worn on dress uniform. However, soldiers will generally find a way to show they have a Red Star or DCB somewhere on their combat armor, just as a matter of pride, and may have allusions to CSRs they have strong personal feelings about. Personalizing of one's combat armor is neither officially allowed or prohibited, but as long as it doesn't make the wearer more visible in combat, one's immediate superior usually won't take issue with it.

These sorts of adornments take the place of good luck charms, which soldiers in the *Albedo* universe really have no concept of (nor any other superstitions).

Spaceship-to-Spaceship Combat

Starship battles are not the focus of the *Albedo* role-playing game. First is a matter of game practicality. Even the smallest capital ship (a corvette) requires an 09 in



the commander's acceleration couch, and corvettes don't count for much on the grand scale of things. Second is the nature of ship combat. When it comes to combat, it really boils down to whose ACVs get the most hits. A single ACV hit will obliterate corvettes, blow destroyers in half, cripple cruisers, and badly damage dreadnaughts and VLCCs. Even ACVs intercepted at close range can pepper a ship with fragments capable of through-and-through perforations of the hull. Starship hulls are quite strong, but not because they are armored -- because they are structures the size of a skyscraper that are capable of 1g maneuvers without collapsing.

If characters are on a ship that is involved in a fight, whatever happens is largely Game Host fiat. *It's unlikely the Game Host will flip a coin to see which half of a destroyer is obliterated if the characters are on board.* There are some things that simply aren't survivable.

For character involvement, starships are a way to get from here to there, and are a place to go home to after liberating an enemy-held mining colony, or exploring an intriguing planetoid. It's unlikely that characters will have anything to do *during* a fight except bite their nails. Or claws. Or talons.

Vehicular Combat

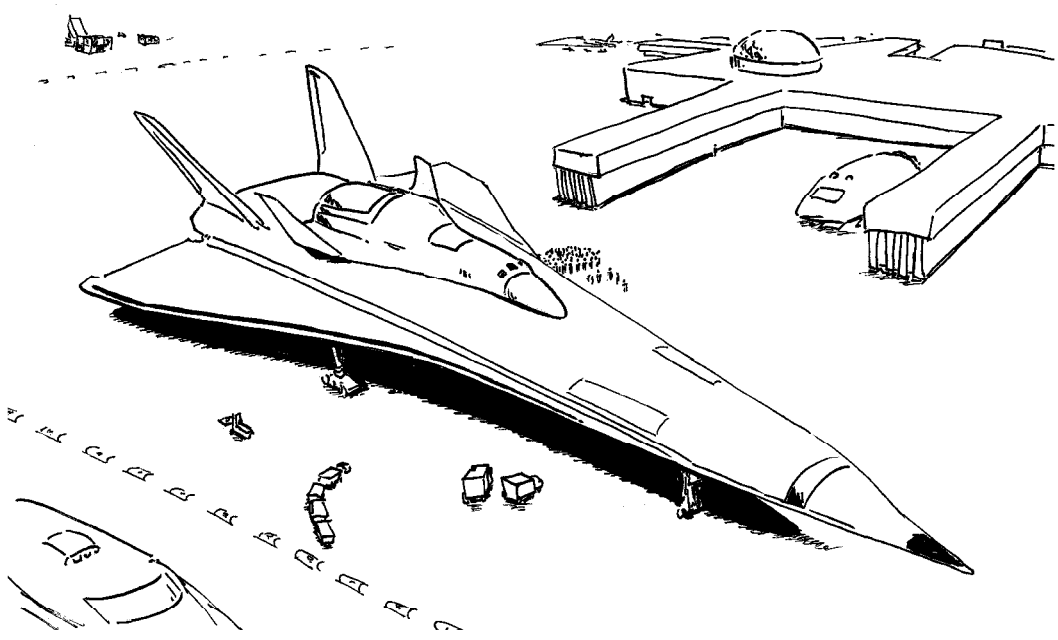
You may need a few modifiers to the basic combat rules when you encounter mechanized enemy forces or are in command of a few of your own. Some of the notes below you'll figure out immediately, a few use new vehicle characteristics listed in the Build & Repair section.

New Terms

There are a few new terms involved with vehicles and vehicle combat. These are not really anything new, but are just an extension of mechanics you are already familiar with.

The first is "die shift". Vehicles are large and inherently easier to hit, and things that would normally be to their benefit are reduced in effect. *A vehicle will have a Size, and most of the time this becomes an equivalent die shift for things relating to vehicle size.* What it means is that for each point of die shift, all affected rolls have their dice reduced by one type, using the following progression: d12, d10, d8, d6, d4, none. If you roll multiple dice, the shift applies to all of them.

If a die shift affects a character's use of a personal skill, then their marks are reduced by the level of shift. For instance, a



5 die shift turns a d12 roll into nothing, but a character with 6 marks in a skill can use their skill like they had 1 mark in it.

EXAMPLE

Example: A vehicle that has suffered a die shift of 1 to its main gun means that the user loses a mark off their skill when they use it. If the character had 3 marks in Vehicle Weapons for a Rote of 4, they would be counted as a Rote of 3. If they Pushed their skill, the die shift means they would roll 2d6 instead of 2d8.

Just remember that die shift subtracts from personal skills, and shifts the type of passive die rolls. A vehicle that has d10 for cover and d8 for range, but a 1 die shift because of its size, will instead get d8 for cover and d6 for range. A tank that has 1 die shift of damage to its tracks reduces the maneuver rating of the tank by 1 die type, and the skill of the driver by 1 mark.

The second term to remember is maneuver. Vehicles can move fast enough that they are harder to hit, and get an extra die or dice to reflect that, with a maximum possible maneuver of 2d12 (two 1d12 results, not the sum of the results). A vehicle will have a maneuver rating, which reflects the *maximum* level of maneuverability it has. This will be adjusted by any die shift for the vehicle's size and if it is moving less than full speed.

Maneuver is a function of vehicle performance, not skill, and so a Maneuver die roll of "1" is not considered a Botch. However, Maneuver can also be used as a Rote. A Maneuver listed as "d8(4)" is either a d8 roll or a Rote of 4, and which one is used is up to the driver/pilot of the vehicle.

Vehicles are easier to hit. *They're big.* Any reasonable vehicle will have at least a 1 level die shift. For a vehicle with a size of 1, instead of getting d8 for 25% cover, it gets d6. Instead of d12 for being at an enemy weapon's Extreme range, it is d10. A 100% concealment is still 2d12, but of course it takes *more* cover to provide a vehicle with 100% concealment.

EXAMPLE

Example: A Maneuver of 2d12 on a vehicle large enough for a 2 die type shift would roll 2d8 for its Maneuver capability (each d12 gets a 2 die shift down to d8).

Most ground vehicles have a one die type shift, small aerodynes would have a one or two die type shift, medium sized aerodynes would have a two or three die type shift, and this includes most of the larger gunships. Only the largest aerodynes would have a four die type shift, and woe be to the person who actually misses one of these when shooting at it. Their companions will never let them live it down.

EXAMPLE

Example: Auitzotl spots an ILR scout car zigging across a distant intersection during a mop-up operation. The range is Long, which is normally 1d10, and the urban zone concealment modifier for the range is 50%, which is another d10, and it is moving a little more than half its maximum speed, which for this vehicle is a Maneuver die of d8 (or Maneuver Rote of 4). However, it's a vehicle, big enough to have a 1 level die shift, so the scout car rolls d8, d8 and d6 (or use Maneuver Rote of 3) for its defense instead of d10, d10 and d8. If the driver of the scout car were an Armored Vehicle Expert and was evading, he would be able to negate the 1 level die shift and the car would roll d10, d10 and d8 (or use Maneuver Rote of 4) for its defense.

Effects of Skill

For a vehicle engaging in evasive maneuvers, a high level of Vehicle Operations skill can make you harder to hit. The pilot or driver can apply their skill in any way allowed as defensive dice (or Rote), but the maximum result or Rote is the same die type or Rote used in the die-shifted Maneuver.

EXAMPLE

Example: If the ILR driver in the previous example had 3 Marks in Vehicle Operations, he could add this to his vehicle's defensive roll, which we'll say is d8, d8 and d6(3), the d6(3) being the die-shifted Maneuver of the scout car (Rote of 3). The ILR driver could use a Basic roll of d8, Push to 2d8, Risk to d10, Breeze to 2d4 or Rote to 5. Given that he is limited to a maximum result of d6(3), the driver's best bet would be to Push and roll an extra d6. So, if the ILR driver engaged in evasive maneuvers at this speed and Pushed their skill, they would roll d8, d8, d6, d6, d6 for defense.

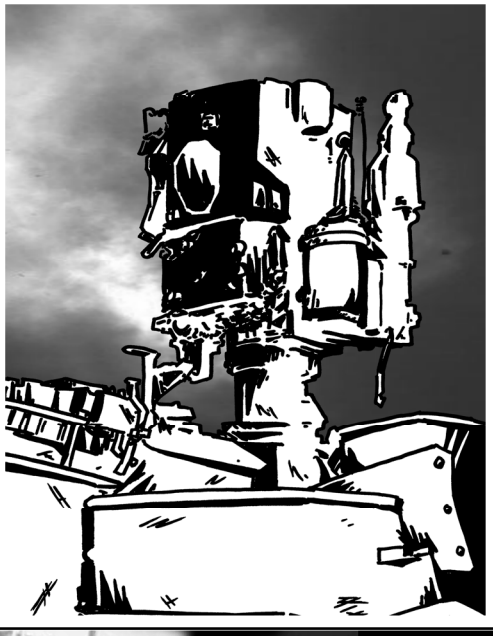
The Gift of Armored Vehicle Expert (q.v.) can improve the protection of armor in a vehicle.

Speed and Maneuvers

Perceived motion is relative. Something very far off could be going quite fast, but pass across your field of view slower than an object that is much closer. The important thing is how hard the target is trying to avoid being hit. If a pilot or driver is doing everything in their power to make their vehicle harder to hit, they can add its Maneuver modifier to any other defensive dice they get to roll.

If the vehicle is just moving at more than half speed (no evasive maneuvers), there is a 1 level die shift, and if the vehicle is just moving at any reasonable pace, there is a 2 level die shift. Any vehicle moving more than a quarter of its maximum speed always gets at least a d4 for movement. Vehicles within one turn of coming to a stop or on the turn they just started moving generally do not get a movement modifier, and are considered helpless targets for Penetration purposes (+1d20 for Penetration). The defensive benefits of Velocity Expert or Armored Vehicle Expert do not apply during this vulnerable interval.

For everyone except the vehicle operator, engaging in evasive action makes doing anything difficult. And as for the vehicle operator, *they* are distracted by the maneuvers they are doing. Even with compensators and dampers linked to computer controls, targeting is more difficult. For systems integrated into a vehicle, the effective range is increased by one level, and so targeting at Extreme range is usually not possible. For non-integrated systems (like firing from the back of a careening truck), the effective range is



increased by two levels, making it impossible to hit things at Long or Extreme range. Fire that would be beyond an effective range of Extreme is impossible.

Characters may not use the Aim action in an evading vehicle.

These penalties are reduced by 1 level for normal maneuvering (non-evasive), regardless of speed. So, integrated systems can compensate perfectly, but non-integrated systems will still have a 1 range band penalty. In general, if you want to hit, don't evade. Rely on range and cover to make yourself harder to hit instead. It is generally not possible to lay sustained autofire into a target from an evading vehicle. *They simply aren't in your sights for the entire combat round.*

"Hey, I'm trying to work back here!"

Aerodynes are capable of accelerations that can be *physically* punishing, to the pilot and most especially to any passengers. Even ground vehicles can engage in violent maneuvers that can toss around the unwary. If a pilot or driver engages in evasive maneuvers to get the maximum maneuver modifier, the part of the maneuver rating in parentheses is the target number for everyone on board to match with their G-Force skill (this number is about the same as the average for the die type rolled).

Being strapped into a proper ground vehicle seat will drop the target number by 1, and a proper acceleration couch will drop the target number by 1. A pilot's outfit has compression bands that alter blood flow to avoid blackouts under extreme g-stress, and will drop the target number by an additional 1. Free-fall infantry and Rapid Response infantry armor may have similar compression bands, since they may be riding in a wildly dodging aerodyne on their way to the insertion point. A Velocity Expert can reduce the felt G-force, and will reduce the target number by 1 for themselves and all vehicle occupants. Rapid Descent Expert reduces the personal target number by 1 but does not help anyone else.

As with many rolls, characters should always use their Rote G-Forces, if their Rote is enough to meet the target.

If the result of the test is a tie, the character will suffer 1 Awe but is otherwise unaffected. Characters who pass the test with a tie or better do not have to retest during that particular series of maneuvers, but after a period of calm flight they would have to retest for a new set of evasive maneuvers.

Failing to meet the target number while strapped in means the character suffers 1 Awe, and must spend a Body to avoid blacking out for 1d6 rounds. For characters who are just along for the ride, it might be better to just suffer the blackouts (choosing to not suffer an Awe or spend a Body), but this often requires leadership on the part of a character to keep supporting characters from panicking.

A character who fails the roll and is *not* strapped in will suffer 1 Awe and take an attack with 0+5 damage, rolling 1d20 for each full 2 points in the target number. The Deflection of worn armor applies normally against this.

EXAMPLE

Example 1: Erma Felna has four marks in G-force and is a Velocity Expert. This gives her a Rote in G-force of 5. With an acceleration couch, g-suit and her ability as Velocity Expert (a total of –3 on the target number), she can easily Rote her way through any d12 evasive maneuvers (which have a G-Force target number of 6), and she can drop the target number for all of her passengers by 1, with an additional 1 for their acceleration couches.

Her own situation reduces her target number to 3 (base of 6, -1 for her G-suit, -1 for acceleration couch, -1 for Velocity. Expert). The acceleration couches and her Velocity Expert talent reduce the target number for her passengers to 4. So, if she has to pull a barrel roll at 600kph with a cargo hold full of airsick greenies, their target number is a 4. They may still have problems hitting this number, and may suffer Awe or black out. If someone were walking around in back when Erma has to make a sudden evasion and failed their G-Force roll (a target number of 5,

since they don't get their acceleration couch), they would take a 0+5 hit with 2d20 Penetration. They get bounced around the cabin like a furry pinball until the character makes a G-Force roll or Erma resumes level flight

EXAMPLE

Example 2: Theodolu is driving an AV-4 when some ILR infantry with heavy weapons open up on him. Not wanting to have his new (and strictly non-regulation) paint job shot up, he engages in evasive maneuvers with only a muttered "hold on!" to notify the passengers. At top speed, an AV-4 has a Maneuver of d8(4), which means that anyone strapped in (-1 to target number) has a target number of 3, and anyone unlucky enough to be moving around when he manhandles the steering yoke has a target number of 4. Most of the supporting characters in the back will probably want to spend a Morale to Risk their normal G-Force roll of 1d4 to 1d6. Theodolu gets the d8 defensive roll for the AV-4's maneuverability in addition to any other dice rolled for range or concealment. It might be worth it, it might not.

Damage to Vehicles

Vehicles use the same rules for damage and armor as people. However, while people can suffer blunt trauma effects, vehicles can't. Vehicles have one special ability when it comes to damage. If the first damage number does not *exceed* the vehicle's Deflection rating, the shot likely bounces. You lose 2d20 off any Penetration dice that would be rolled, and if this would result in zero Penetration dice, the shot simply glances off the armor.

The vehicle armor acts as 100% cover for everything in the vehicle. If there are Penetration dice remaining and armor is penetrated, the weapon's first damage number is reduced by the Deflection of the armor.

This limit also applies to explosive weapons, which have comparatively low damages, and get most of their combat effect through Penetration dice. An explosive with a Damage less than a vehicle's Deflection gets 2 less Penetration dice. Contact and close range hits can still do significant damage since they still have multiple Penetration dice, but hits at the fringes of the blast radius will have no effect (no Penetration dice).

A target that is helpless, like a stationary vehicle, or one that has just started moving or about to come to s stop (like a landing aerodyne) does get an extra d20 applied against it, and would also get an extra d20 applied on a critical hit.

EXAMPLE

Example: So, a MPKW 2-18 pistol with a damage of 8+7 will seldom do anything more than bounce off a vehicle with a Deflection of 12. Unless you had 3d20 Penetration dice (normal + helpless + critical hit), you would have no chance of doing any damage. It may scare the people inside, but the veterans will know that there are scarier things than loud noises, and save their adrenalin for when they can start to see daylight through the hull. However, if you did have 3d20 Penetration dice to start with, your 1d20 Penetration to anything on the other side of the armor would add to a damage of -4 (the Damage of 8, minus the Deflection of 12).

You can, if you want, apply this rule to characters or foes who have 100% concealment because they are inside buildings or other enclosing cover. If the first damage number of the weapon cannot penetrate any Deflection value of the cover, then actually doing damage to someone behind it is nearly impossible with direct fire weapons ... which is why grenades are standard issue.

Blowthrough

One negative trait of high-powered kinetic weapons is *blowthrough*. Only energy deposited in a target can deal damage. If the bullet or shell goes completely through a target, any remaining energy is lost. This is not that that big a deal with infantry weapons. However, for heavy vehicle weapons, they can end up going through a light vehicle and do little more than leave a pair of holes with glowing edges and a bit of spalling.

While you would use the rolled total for determining special effects like hit location, the actual damage total (after

armor) on a vehicle from a kinetic hit is usually not more than the vehicle's Deflection + Body plus the results of the Penetration dice. Yes, a heavily armored vehicle can take more damage from a penetrating hit than a lightly armored one! The hits spray hot bits of molten armor around inside the vehicle. Thicker armor means more globs of hot metal splashing around...

EXAMPLE

Example: The ILR's LH 60-1 cannon has an tremendous Damage of 69+25, while a D-32 aerodyne only has a Deflection of 8 and 28 Body (for Thresholds of 56/66/76/96). Using normal rules, the cannon would Devastate the D-32 on a single hit. However, The LH 60-1 is a straightforward armor-piercing kinetic weapon, so the *maximum* amount of damage that can be done is the D-32s Deflection + Body (36) plus the Penetration dice result. This would be an average of 75 on a penetrating hit, and a maximum of 81 for a 1d20 Penetration roll. This is serious, but *not* enough to completely take out any aerodyne system in one hit. Furthermore, hits that don't Penetrate only do 36 points, which do not even reach the first threshold.

Big vehicles can come home full of holes but still be quite functional. Note that the blowthrough rule *does not* apply to explosive weapons. These leave *big* holes in anything they penetrate.

EXAMPLE

Example: The IKW-112 cannon is an explosive weapon with a damage of 15+15. On a direct hit to a D-32, it gets a damage of 15, +5d20 Penetration dice. On average it does about 75 points, about the same as the LH 60-1, but it can max out a 5d20 Penetration roll at 110 points, more than enough to Devastate the D-32!

Vehicle Armor

Civilian vehicles, even if armored, are generally armored in a symmetrical fashion. For instance, a dignitary in an armored limousine has no idea where a potential attack might come from, so the limo needs equal protection on the bottom from buried explosives as it does on the sides from a roadside ambush.

Military vehicles on the other hand, generally have a "front towards enemy" philosophy. The listed Deflection rating of a military vehicle represents its *forward facing* armor. All other facings are likely lower than this amount. For a side hit, the Deflection is reduced by 2, and for a rear, top or underside hit, it is reduced by 4.

EXAMPLE

Example: An AV-4 variant with a listed Deflection of 15 has a Deflection of 15 on the front, 13 on the sides, and 11 everywhere else.

Vehicle Hit Locations

If the base damage of a weapon *exceeds* the Deflection on that facing, you roll d20's for penetration and additional damage as normal for the weapon type or circumstances of the attack. This includes any extra d20's roll because of previous vehicle damage. To avoid needing a hit location table, *where* a vehicle takes a hit will depend on the *total* damage you *apply to the vehicle*.

It requires a Routine leadership action to direct Supporting Characters to make a called shot. If you succeed in the called

COMMAND REVIEW • [illegible]

Open-Topped Vehicles

Some vehicles like armored trucks have an open top. Others, like mortar carriers have large armored panels that must be open to use the weapon, and sometimes you just have things like open roof hatches on an armored personnel carrier. Attacks from a superior height or with indirect fire weapons have the potential to go through an open hatch or land in an open area, completely bypassing the actual Deflection of the vehicle. This is determined on a case-by-case basis. For instance, an armored truck might have an open-top passenger bed, and an indirect fire hit that is a passenger location would bypass Deflection. The same for a weapon hit on a mortar carrier. In cases where it is not certain or not clear, a critical hit will usually do the trick if there is normally a 50-50 chance or better of it happening. Only at Game Host fiat do you get the chance of randomly putting a round into a single open hatch.

shot, you hit as though your damage total met the appropriate criteria and the vehicle takes effects as if you had. If you miss the called shot, you miss the vehicle.

Damage totals and hit locations are related as follows:

Damage Total is Odd: **Generic Hit**

If the damage total is *odd*, the vehicle takes a *generic* hit. The damage effect is generalized and not confined to one specific type of vehicle system. The vehicle takes Body appropriate to the level of the wound, and suffers die shift penalties to everything that isn't mobility or weapon-related (like sensors, communications, computers, etc.).

For efficiency's sake, vehicle components are packed in pretty tight. What a generic hit means is that several subsystems were probably hit, but the effect is not centered on any particular one.

Damage Total is Even (Divisible by 2): **Mobility Hit**

If the damage total is *even*, the vehicle is hit in a *mobility* system. This could be wheels, tracks, ducted fans, thrust venturis, engine, transmission, etc. Any penalties suffered only apply to maneuvering and other vehicle movement.

Damage Total is Divisible by 4 **Mobility Hit and Weapon Hit**

If the damage total is *divisible by four*, you get a mobility effect *and* a *weapon* effect. One weapon system suffers damage penalties appropriate to the level of damage done. This could be damage to the weapon system, or it might be a sensor-blinding effect. Shooting up vision ports and shattering external sensors can affect weapon function nearly as much as a hit to the weapon itself.

Damage Total is Divisible by 8 **Mobility Hit, Weapon Hit, *and* Crew Compartment Hit**

If the damage total is *divisible by eight*, it is a *crew compartment* hit as well as a weapon and mobility hit. If it is a passenger carrying vehicle, the operating crew is affected on front hits, otherwise the passengers are affected. For non-explosive weapons striking a fully occupied vehicle, one person in the affected area takes a hit with the damage of the weapon reduced by the Deflection of the armor, which *can* turn out to be a negative number. If the vehicle is not fully occupied, a hit to the passenger area has a chance of hitting an "empty seat" proportional to the number of unoccupied slots.

EXAMPLE

Example: So, if you shoot an LRCKW (damage of 24+12) at a vehicle with a Deflection of 15 and hit a full crew compartment, someone in the crew compartment will take a hit with a damage of 9+12 from the shrapnel and the residual energy of the projectile. With a damage of 24+12, this weapon would hit the crew compartment on a penetration roll of 8, 12 and 20. Even though rolls of 8 and 12 do not penetrate the Deflection and generate extra damage, the base damage total of 24 is divisible by 8. A penetration roll of 20 gives a damage total of 56, which is evenly divisible by 8 as well.

Note: People struck through 100% cover that is penetrated by weapons should also have the damage reduced by the Deflection of the cover.

If the weapon was explosive (including shaped charges), *everyone* in the affected area takes the damage. Explosive damage rolls Penetration dice based on whether the first damage number exceeded the vehicle's Deflection. If it did not, you lose two d20's off the number of penetration dice rolled (and reduce the first damage number by the vehicle's Deflection). If the first damage number *does* exceed vehicle armor, the round detonates *inside* the vehicle *after* getting through the armor, and you should realize by now that this will be very, *very* bad.

Damage Total is Divisible by 16: Vital System Hit

Last, if the damage total is *divisible by sixteen and armor was penetrated by at least one of the penetration rolls*, you hit something absolutely vital. In addition to all the other effects, the vehicle shuts down, at least temporarily. An AV-4 may have a gas turbine, a battery bank and ten independently powered drive wheels, but if you put a bullet in the main power bus, none of the electrical power is going to get where it is supposed to. This can be a "soft kill", where the vehicle may be largely intact, but loss of a particular vital system renders it combat ineffective.

It is a repair task with a difficulty equal to the Body Damage done by the hit with a Labor in Hours (not days) equal to the Body Damage done by the hit. If it was merely a wound, it is a simple patch to get going again (difficulty of 1, 1 Quality-hour). Assuming you know how to repair things...

You must get a successful penetration to have this result, otherwise any weapon with a damage evenly divisible by 16 could do it, even without penetrating armor.

EXAMPLE

Example: If we used the previous vehicle and weapon example, you can't actually get a soft kill with only 1d20 for penetration, since no penetration roll of 16 through 20 generates a damage total divisible by 16. However, if you had 2d20 for Penetration and succeeded on both, you could get a soft kill result.

To keep track of a vehicle's status, you really only need to monitor its Wound status, just as you would for a person. You have three tracks for the subsystems of the vehicle, and one for the Body. Wounds, Crippling and Incapacitating effects cause loss of vehicle Body just as they do for characters (1 for a Wound, 3 for Crippling, 5 for Incapacitated), and if a vehicle's Body ever drops to zero from cumulative damage effects, it just stops working and can be considered totaled.

The die shift a vehicle takes to a damaged system is the same as the Body done by that level of damage. However, you only count the highest die shift taken.

EXAMPLE

Example: A vehicle that takes a Crippling mobility effect after taking a Wounding mobility effect will have lost 4 Body and have a 3 die shift on Mobility.

Wounded

A vehicle Wound does 1 Body and applies a 1 die shift to use of the affected system. Hits on a vehicle with any Wounds get +1d20 Penetration.

Crippling

A Crippling effect does 3 Body and applies a 3 die shift to use of the affected system. Using a Crippled mobility system at full effect (maximum Maneuver, full rate of fire, etc.) will do 1 Body to the vehicle per turn. A mobility-Crippled vehicle can be limped along at low speed for quite a while. Hits on a vehicle with Crippling damage get +2d20 Penetration.

Incapacitated

An Incapacitating effect does 5 Body and applies a 5 die shift to use of the affected system. Using an Incapacitated mobility system at any level of effect will do 1 Body to the vehicle per turn (2 Body if used at its current maximum speed). A mobility-Incapacitated vehicle can be limped along, but is on its last legs and *will* give out in the near future. Hits on a vehicle with Incapacitating damage get +3d20 Penetration.

Devastated

A Devastated result to a general location kills the vehicle, and to mobility or a weapon, renders that system unusable – the vehicle can only be scrapped, not repaired. Note that a vehicle with multiple weapons will have the largest remaining weapon and all central fire control wiped out by a Devastated result.

COMMAND REVIEW • [illegible]

Sniping at Vehicles

The most Penetration dice a person could get firing at a vehicle is 5d20: a base of 1d20, +1d20 for stationary (helpless) and +1d20 for a critical hit, and +2d20 for the Gift of Sniper Master. Even with a light weapon, this allows for shots through vision devices, into engine intakes, and so on. With heavier weapons, these extra Penetration dice can be devastating to a vehicle.

Example Vehicle

See page 266 for the details of this vehicle:

APCL-8

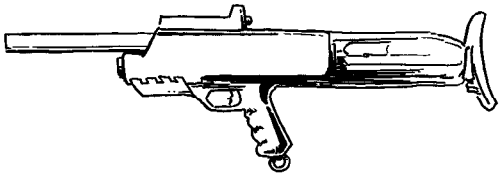
Armored Personnel Carrier

Top Speed: 80 kph amphibious	
Maneuver: d8 (4)	**Deflection:** 13
Size: 1	**Thresholds:** 36/46/56/76
Crew: 1+8	**Body:** 18
Armament:	❑❑❑❑ ❑❑❑❑ ❑❑❑❑
8mm remote	❑❑ ❑❑❑❑
MG turret	**Damage:**
	General ❶ ❷ ❸ ❹ ❺
	Mobility ❶ ❷ ❸ ❹ ❺
	Armament ❶ ❷ ❸ ❹ ❺

The most severe of any damage that applies to a given system is a die shift to use of that system. If an operator's skill cannot get at least a die-shifted Rote of 1, it means that they do not have the skill to overcome the limitations of the damage, and at least for them, the system is non-functional.

For example, Crippling result on a vehicle's Mobility does 3 Body, and is a 3 level die shift to any use of the vehicle's mobility. If the driver does not have sufficient skill to have a Rote of 1 after a 3 level die shift, then they cannot make the vehicle move at all. With a Crippling result, this vehicle now ignores the effects of other Crippling results and Wounds. However, such hits still accumulate Body damage to the vehicle, which can eventually render it non-functional, even with no further penalties on rolls.

Even if a vehicle or subsystem is "incapacitated", a *skilled* operator (able to get a Rote of 1 after a 5 die shift) can keep a badly damaged system going just long enough to land an aerodyne or get an armored vehicle under cover before abandoning it.



EXAMPLE

Example 1: Theodolu is *not* happy. Not only did one of his supporting characters crack his head open on the ammo locker when Theodolu engaged in evasive maneuvers, an ILR kinetic dart ventilated the side of his AV-4, ripping through a data line and severing a power cable to two of his road wheels. His vehicle has suffered a mobility Wound. Mark off 1 Body and mark through the ❶ on the Mobility row. The on-board computer compensates as best it can, but his Maneuver drops from d8 to d6. Looking at the vehicle power plant table, we can guess that his top speed is reduced by twenty-five percent, which for this vehicle would be from 80kph to 60kph. Fortunately, Theodolu managed to nip his vehicle down an alley before the ILR squad could lob another dart at him. *Unfortunately, it's a blind alley...*

EXAMPLE

Example 2: After a few rounds of battle, an APCL-8s profile might look like this:

APCL-8

Armored Personnel Carrier

Top Speed: 80 kph amphibious	
Maneuver: d8 (4)	**Deflection:** 13
Size: 1	**Thresholds:** 36/46/56/76
Crew: 1+8	**Body:** 18
Armament:	✗✗✗✗ ✗❑❑❑ ❑❑❑
8mm remote	❑❑❑ ❑❑❑❑
MG turret	**Damage:**
	General ✗ ❷ ❸ ❹ ❺
	Mobility ✗✗ ❸ ❹ ❺
	Armament ❶ ❷ ❸ ❹ ❺

Then someone trying to use the remote turret has no penalty, since the general overall damage does not affect weapons fire, but someone trying to drive the vehicle has a 2 level die shift. This means that you need a starting skill of at least 2 marks to do anything at all with the vehicle, and this would be at a Rote of 1.

(For the example of how to *repair* this vehicle, see page 242.)

Loss of Mobility

Mobility penalties are die shifts to the Maneuver rating of the vehicle, but in practical terms, the top speed of the vehicle is reduced by about 25% per die shift. So, a vehicle that starts with a d4 Maneuver will

have *Maneuver* drop to zero after a 1 die shift, but the top speed of the vehicle probably drops by 25%, and someone with a Rote of 2 (dropped to 1 by the die shift) can still get the vehicle up to this reduced top speed. If the operator has the skill to overcome any die shift from damage and get the vehicle moving, it can always move at up to 25% normal speed. An AV-4 with its tracks blown off can still move across open ground, just *very* poorly, and with a good chance of getting stuck unless you have a very skilled operator.

Damage thresholds for vehicles are figured identically as for characters, but vehicles tend to have a lot more Body for their inherent size, plus additional Threshold amounts for very heavily armored vehicles, and can therefore take a lot more hits before going down. For instance, an Aero C-3 aerodyne has generally poor armor, but with a Body of 16, it means you have to get 32 points of damage through for it to even notice. This amount is barely possible for an AW 191 carbine (damage of 8+9) to do. It is more likely if it can get +2d20 or more to roll for Penetration, which is easily possible if the C-3 is ambushed as it slows down for a landing.

Shock & Awe

Having friendly vehicles nearby is a great morale booster. Having friendly vehicles providing fire support will subtract 1 Awe from any effects infantry would ordinarily suffer. This subtraction is *per occurrence* that a soldier would normally take an Awe effect. This effect only lasts as long as the supporting vehicles are showing no impairment from damage taken.

Being in an armored vehicle also helps, both for the crew and any carried infantry. As long as enemy weapons have a damage less than the Deflection of the vehicle, crews and passengers fully under armor suffer nothing more than annoyance at being shot at. However, this benefit ends the instant the armor is penetrated by enemy fire to the extent that the vehicle or any occupant loses Body. Once the illusion of invulnerability is broken, it is not regained for the duration of the combat.

Hiding a Vehicle

A vehicle can hide just like a person, gaining a 25% cover and concealment bonus. Air vehicles can only 'Hide' while hovering or parked on the ground (and therefore count as 'Helpless' (take +1d20 Penetration if hit). If the operator has Armored Vehicle Expert (for ground vehicles and aircraft sitting on the ground) or Velocity Expert (for aircraft which are actually in the air), he or she can also negate 1 level of size as if they were evading. They are not *actually* evading, but are simply using any available cover in a more intelligent manner.

It takes 6 Quality-hours of Labor to prepare a hiding place (using Vehicle Operations or Build skill). A prepared Hiding place takes no extra time to enter or exit but the entry and exit points are usually limited. To use existing terrain for Hiding is a vehicle operations test of Intermediate difficulty which is always rolled (d8) because there may not be anything near you when you need it and even the most inexperienced driver will find a place by chance eventually. The size die shift for a vehicle will always apply to skill use when trying to hide your vehicle (it's harder to hide a big vehicle).

Prepared positions cause no modifications to perception (see below) but improvised hiding affect perception and sensor operations under the same rules as Hiding involving a person.

Note that most defenders Hide their vehicles and can spend time to prepare several hiding places (which EDF troops call 'Rabbit Holes') in an area of operations.

Fog of War

Any time an explosive weapon goes off on or near the ground, it stirs up huge amounts of dust and debris, along with the smoke from its own detonation. Any area in the blast radius (out to where 1d20 is rolled for penetration) is immediately counted as 100% obscured for mortars, rockets and general high explosives, and 50% for grenades. This will drop by 25% per turn outdoors, and 25% each 2 turns indoors. Wind or rain or a non-dusty substrate can make it dissipate faster or be less obscuring. A mortar shell going off on a grimy city street churns up more dust than

one that embeds itself in grassy turf before detonating.

An explosive that detonates somewhere in the LOS between you and an enemy will provide half the normal benefit, since it unlikely the cloud of debris will completely block your view, but odds are it will still partially block your line of sight.

Aerodynes can generate this same effect by hovering over any area that has dirt and dust that can be stirred up, and they may cause obscurement even if they don't want to.

Perception

The peoples of the Albedo universe have had all their perception abilities radically shifted towards the Human norm as part of the anthropomorphizing process. Species which had significant super-human senses retain some enhancement but only at very high skill levels do abilities exceed what is possible for humans. On the other end, all species have had sub-par Human senses improved to Human standard. For instance, everyone has stereoscopic color vision with significant peripheral range.

Being able to see or otherwise sense things is one of the most important things in any combat, and is often taken for granted. A character's Spot skill is the one most commonly used for this purposes, though Listen, and rarely Smell can also be used.

The engagement range for any scenario is going to depend on the local conditions and the *best* spotting score among the sides involved (no one starts shooting until *someone* spots the enemy). Spotting the enemy *before* they spot you is critical in combat, more important than weapons skill or any other single factor.

For any given encounter, there is going to be a default level of difficulty to see/sense things at the expected engagement range. For ease of use, this can match the stats of an EDF carbine:

Spot Range (EDF Carbine)	Target Number
S15	2 or d4
M50	3 or d6
L330	4 or d8
X2300	5 or d10

Targets beyond Extreme range can only be spotted if they are large (reduce effective range) or if spotting gear is used (telescopic sights divide the range by the power of the sight).

For a group as a whole, use the fixed number. If it is an important play involving a single character, you can use the fixed number or the die type. The basic idea behind these perception rules is to give the Game Host a feel for the battle area as a whole, not to bog things down with lots of individual rolls.

If you can beat this number with a Rote use of your Spot skill (which is at least a 2), then you have full awareness of what is going on within that range at all times during combat.

Sixth Sense Skill, for those who have it, serves as a 'floor' or minimum for any perception dice rolls. It does not change the Rote but it does prevent Botching when rolling and ensure that a perception effort is usually at least as good as the Rote. Characters using Sixth Sense are noticeably edgy, however.

EXAMPLE

Example : A character with one mark in Sixth Sense has a Rote in it of 2. No *die roll* involving perception will be counted as rolling less than 2.

A Rote use of Spot requires no time and represents your general situational awareness. You use your Rote value because you are *really* concerned about doing it right, and spotting absolutely *everyone* who is trying to kill you. Rote value also lets you see how well supporting characters as a whole can assess the situation. Odds are that they will be blindsided by any well-planned attack, but once characters spot things, other modifiers will take over and give everyone a passable chance to figure out what is going on. If you can't do it by Rote, you have to roll on Spot skill, however you deem best for the situation.

Diving For Cover is a Popular Choice

Generating a perception score other than by Rote is an action. This takes a turn, but if you are successful, you maintain awareness of the threat you were looking for until it goes to a longer range or alters the target number in some other way. At this point you get a free Spot roll to maintain line of sight. If you fail, you lose them.

Any character who sets a Watch get a free perception roll if they wish but remember that one has to specify what one is watching for (movement is popular) and what one will do when one's Watch is triggered ('shoot' and 'hide' are popular). Watches can be triggered on ties (character's choice) but a firm ID is only made on a success. You could end up shooting a friend or civilian if you elect to react to ties.

Beyond this, there are plenty of things that can modify the base target number.

General Situation	Target Number
Battle Management Software	–1
Concealment	+1 to +3
Quantity of Targets	–1 to –3
Target is obvious	–2

Personal Situation	Target Number
Wounded	+Awe
Under fire	–1
Total awareness	–1
Watching	–1
Sneak skill	Special
Hiding	Special

EXAMPLE

Example : Even if you only have a Spot of 1, if you have the support of battle management software(-1), there are several enemy out there(-1) and they're shooting at you(-1), then the target number is 1. Your Rote of 2 lets you spot everything that meets those criteria within 330 meters. Anything outside this range or set of criteria, you may have to roll for. For instance, if there is a lone soldier trying to sneak around for a flanking shot, you get the advantage of your battle management software, but the soldier is not part of a group and is not shooting at you (yet), so your target number is a 3, which you *can* beat with your default d4 on Spot. You just have to roll for it instead of getting it automatically.

That requires that you spend a turn looking around or that you be on Watch.

Battle Management Software

Your helmet's display and weapon sight are linked to those of everyone else in your squad and any squads within radio range in the cluttered EM environment of the battlefield. Any target that anyone else sees is automatically classified and patched through to your display. If there is someone 100 meters behind you and to the left, and a member of a fire team 50 meters away spots them, then *you* spot them. The only downside of battle management software is that you do not get the bonus until you are *in* a battle. It doesn't help you spot an ambush; it just helps you keep track of the enemy once the shooting starts. On the small scale, no one gets the battle manage-

ment software bonus until *someone* spots things the old fashioned way.

Concealment

Concealment is a catch-all that represents obscurement, darkness, smoke, bad weather, you name it. Each 25% concealment is a +1, but 100% actual concealment is always a "you don't see me" situation. If there are multiple types of obscurement, they add their concealment. So, a 50% for darkness, combined with 25% actual cover would be a 75% concealment modifier. While you can normally only get 50% cover when firing a longarm, a sniper in proper cover *can* get 75% cover (though in the *real* world they are usually under 100% cover and you don't detect one unless you step on them).

Some forms of concealment can be negated or reduced by standard technology. A night vision device will offset darkness, for instance. The general level of obscurement sets the scene more than anything else. If it is dusk in a light forest, then nothing is going to happen past 150 meters, since that is the range where these two conditions add up to 100% concealment. Anything that happens outside that range is beyond what the characters can do anything about except by firing blind and getting lucky.

Quantity of Targets

If there is a lot of what you are looking for, odds are higher you'll spot at least one of them, and that will help you spot the rest. An enemy squad would be –1, a platoon –2, and a company –3.

Target is Obvious

Ordinarily, anyone in a combat situation is presumed to move about and generally act in such a way so as to *avoid* notice. Uniforms are colored to blend into terrain, men and women move carefully and the weapons give off minimum visual signatures. However, sometimes, a target is obvious because it does or is doing something that stands out. Moving and shooting at the same time, wearing bright or contrasting uniforms, using tracer ammunition, firing a weapon at night without a flash suppressor (which is common), moving casually around in the open, etc., are all examples of obvious targets. Characters who want to appear "normal" in non-combat environments are going to be obvious targets too.

Size of targets

A column of enemy vehicles is easier to spot than a similar number of infantry. Small vehicles would be –1, large ground vehicles or small aerodynes would be –2 and large aerodynes would be –3. This is the same as the size modifier of the vehicle.

Wounded

If you suffer Awe during a turn, this affects your situational awareness. The Awe points you take make it harder to notice other things going on. The exception to this is that you get a free chance to spot whoever just did that to you, in case it isn't already obvious. You may end up passing out or panicking before you can pass this information on, but that's life.

Under Fire

Being the focus of enemy attention really clarifies your senses. If nothing else, the muzzle flashes and angry metal bees going by tell you where to look.

Total Awareness

If your Listen, Smell and Sixth Sense scores total to 6 or more, the extra acuity these senses provide can give you an overall bonus. This may not even be consciously recognized. You may not be aware of an "enemy smell", but the tickle in the back of your mind keeps you more alert than if it wasn't there. In some circumstances smell or listen or both may not function (such as in a vacuum (neither), in a sewer (no smell) or in a loud environment (no listen) and in these cases only the functioning senses (if any) applies to check for the total of 6 or more. Characters with a total score of 12 or more for Listen, Smell and Sixth Sense may take this bonus twice, making it really hard to sneak up on such a person.

Watching

If you are Watching are particular spot or small group of spots, you are much more likely to notice the appearance of what you are looking for. Straight visual Watching is a –1, while using a vision enhancer like a scope or binoculars reduces the effective range, but limits you to Watching a smaller area.

Sneak Skill

If you have Sneak skill (and are using it!), you can add your marks to the target number someone else has to spot *you*. However, you cannot add more marks than the normal target number for that range.

Remember that you cannot take *any other action* during a turn in which you are Sneaking other than use one particular movement skill. If you are Hiding, you do not move; the difficulty of all your own Listen and Spot rolls increases by 2, but the difficulty for others to find you increases by 2+Marks in Sneak Skill.

EXAMPLE

Example: A squad is moving down a rainy city street and has a likely engagement range of about 30 meters. This means the default for any possible scenario involving only a few hostiles (no quantity modifier) is a target number of 3 before the shooting starts (2 for the range, and +1 because of the rain). Characters with a better Spot skill may notice things by Rote, but everyone else is going to have to roll for it, and may not actually spot any hostiles until someone actually fires at them.

Auitzotl is constantly looking around. He cannot really Watch, since he doesn't know where to look, but he is Spotting every turn as the squad moves carefully down the street. Auitzotl has 1 mark in Spot, but 2 in Listen and 2 in Smell and 2 in Sixth Sense. This gives him the bonus for total awareness, so he only has a target number of 2, which he can do by Rote with his Spot of 1 if he chooses to act on ties. He does, but his action is not to shoot, but to alert the rest of the squad. He automatically assesses the situation the instant he gets in visual range, and speaks a quick command into his helmet mike. On the next turn, everyone in his squad gets the battle management software bonus, even if the shooting hasn't started yet, so their target numbers are now 2 instead of 3. Once any shooting starts, it drops to a target number of 1, and everyone will know exactly where the hostile or hostiles are at. If Auitzotl didn't have these keen senses and experience, he would only be rolling 1d4 to hit the target number of 3 instead of automatically getting it by Rote. The game host would only have Auitzotl roll when it was important, not every turn he is out on patrol.

On the other hand, any potential hostiles trying to spot Auitzotl and his friends only have a target number of 2, since they are looking for a squad, not one or two people.

Listen and Smell

These do not have the same degree of importance as sight, but in some situations can be equally valuable. Listen can pick up the sound of enemy movement even under total visual obscurement. Smell can detect things that are completely hidden (upwind), or even things that aren't there anymore. Listen used alone is going to be a +1 modifier, and Smell is going to be a +2 modifier, and both will be situational. Weapon fire is usually a –3 modifier to detect (it's loud!), and most conditions that mask sight are only half as good at masking sound (you can hear a gunshot in a building you can't see into). Weapons that are sound-suppressed are only –1 to detect. Neither smell nor hearing gives enough information to target a weapon with except under the most unusual circumstances, but if visual spotting *is* possible, a successful Listen or Smell can help pinpoint where to look.

Setting Perception

Characters may set their perception for an encounter by using any of the usual methods of skill score determination:. That is, they may choose to roll before well before an engagement starts to represent their level of alertness, and keep that result until they choose to pay Drive or Morale to re-roll it, or a minimum of 1 Drive or Morale to reset it to Rote. Normally, you do not get to re-roll or reset the number until hostilities start and the adrenalin starts flowing. And you can work this into play. The supporting character who rolls a '1' was out late last night carousing and is hung over, or the guy who rolled maximum is wired because he had a bad dream or sense of déjà vu about the current situation.

This rule is primarily used to speed play and to determine who is 'on' for the encounter ("Yeah, all right, I got point..."). It saves time and eases play and bookkeeping during an encounter.

Consolidated Perception Table

Condition	Terrain	5m	10m	25m	50m	100m	150m	200m	300m	500m
Active Sonar	—	25%	25%	25%	25%	25%	25%	25%	25%	25%
Active UV Lighting	—	0%	0%	0%	0%	0%	0%	0%	0%	0%
Brush	Uneven	0%	0%	0%	0%	0%	0%	0%	0%	0%
Building Interior	Even	50%	100%	100%	100%	100%	100%	100%	100%	100%
City Lights	—	75%	75%	75%	75%	75%	75%	75%	75%	75%
Collapsed Building	Impassible	0%	0%	0%	25%	50%	75%	100%	100%	100%
Daylight	—	0%	0%	0%	0%	0%	0%	0%	0%	0%
Desert Sand	Uneven	0%	0%	0%	0%	0%	0%	0%	0%	0%
Dusk	—	25%	25%	25%	25%	25%	25%	25%	25%	25%
Flooding Rain	Uneven	0%	25%	50%	100%	100%	100%	100%	100%	100%
Full Moonlight	—	50%	50%	50%	50%	50%	50%	50%	50%	50%
Hail	Uneven	0%	0%	25%	50%	100%	100%	100%	100%	100%
Hard Rain	Uneven	0%	0%	25%	50%	100%	100%	100%	100%	100%
Heavy Snow	Uneven	0%	0%	0%	25%	50%	75%	100%	100%	100%
Hills	Uneven	0%	0%	0%	0%	0%	25%	50%	75%	100%
Infrared (heat only)	—	25%	25%	25%	25%	25%	25%	25%	25%	25%
Light Forest	Uneven	0%	0%	0%	25%	50%	75%	100%	100%	100%
Light Snow	—	0%	0%	0%	0%	25%	25%	50%	75%	100%
Low-Light Enhancing	—	25%	25%	25%	25%	25%	25%	25%	25%	25%
Marsh	Uneven	0%	0%	0%	25%	50%	75%	100%	100%	100%
Mountains	Impassible	0%	0%	25%	50%	100%	100%	100%	100%	100%
Plains	Even	0%	0%	0%	0%	0%	0%	0%	0%	0%
Remote Viewing*	—	+25%	+25%	+25%	+25%	+25%	+25%	+25%	+25%	+25%
Sandstorms	Uneven	0%	25%	50%	100%	100%	100%	100%	100%	100%
Snowstorm	Uneven	0%	25%	50%	100%	100%	100%	100%	100%	100%
Soft Rain	—	0%	0%	0%	0%	25%	25%	50%	75%	100%
Space Station	Even	100%	100%	100%	100%	100%	100%	100%	100%	0%
Swamp	Uneven	0%	0%	25%	50%	100%	100%	100%	100%	100%
Thick Fog	—	0%	25%	50%	100%	100%	100%	100%	100%	100%
Thick Forest	Impassible	0%	0%	25%	50%	100%	100%	100%	100%	100%
Underground Darkness	—	100%	100%	100%	100%	100%	100%	100%	100%	100%
Urban Zones	Even	0%	0%	0%	0%	25%	50%	75%	100%	100%

When stacking modifiers, use the *worst* one. *Exception: remote viewing adds 25% concealment to the target.

These are averages and most effects should not be used if an actual detailed map or miniatures are used. Also, elevated positions (like a skyscraper or mountain ridge) and artificially long sight lines (like down a highway) will change these numbers but such effects are up to the Game Host's imagination and player initiative. Long range engagements will be rare in high cover areas such as cities but are common in the countryside or (especially) when interfacing between countryside and city.

Called Shots

Aiming at a specific part of a vehicle allows a character to single out a weapon system or mobility hit. You cannot aim for a generic hit. Aiming at a specific part of a vehicle is like any other specific targeting. In general, against a vehicle you will lose any size bonuses to hit and count the location aimed at as a person-sized target. Also, if you do hit what you were aiming at, the damage is only to that part of the vehicle. If you go for a weapon effect and succeed, you do *not* get a crew and a mobility effect as well. However, if you are using an

explosive weapon, you probably hit at least one member of the weapon crew on any weapon called shot.

If a vehicle has more than one of a given system, you have to choose which one you are aiming at, and only the one aimed at is directly affected.

EXAMPLE

Example: If you shoot at the weapons of a vehicle that has two turrets, you have to choose which one you are shooting at, and any penalties that apply from the damage should really only apply to that turret.

A called shot that misses by 1 hits the vehicle using the normal random location system (which may hit the intended area!). Any miss by more than 1 is a miss. Any visible crew may be targeted as a person sized target with appropriate cover and concealment modifiers and modifiers for the vehicle's motion (if any) but they do not suffer additional penetration dice for the vehicle being stationary (if any). Any hits striking the cover (the vehicle) check for damage to the vehicle.

It takes 1 point of Morale or Drive to do a called shot on any enemy vehicle that has demonstrated it is aware of your presence. Supporting Characters will not make called shots at all without an officer to direct them. It takes a cool head to spend the extra time to lay a bead on something that big that is out to do you harm.

Vehicle Duels

Aerodynes at two klicks isn't a dogfight, it is a matter of who hits whom how often and how hard. On the other hand, two aerodynes doing nap-of-earth down city streets trying to get the jump on each other is a vehicle duel, as would be a chase between land vehicles down those same streets, or even trying to outmaneuver an enemy aerodyne with your AV-4.

This is handled in a quick and fairly abstract way. Each turn, each driver or pilot gets die rolls equal to the Maneuver of their vehicle, and their skill with operating the vehicle (Vehicle Operations).

A novice pilot (d6 skill) in a high-performance vehicle (d12 Maneuver) rolls the same dice as a hot pilot (d12 skill) in a slow vehicle (d6 Maneuver). However, the skilled pilot can Push to 2d12, for a roll of d12,d12,d6, while the novice can only get d6,d6,d12. *Skill trumps vehicle performance.*

All of these dice are adjusted by the size of the vehicle. An Armored Vehicle Expert or Velocity Expert gets their die types bumped up one level. Whoever gets the high roll can choose the order in which both vehicles move and fire on *that* turn. Ties would be broken by whoever has the most marks in their vehicle operations skill. Further ties are broken by Sixth Sense, and if it still a tie, both sides act simultaneously.

If *all* the winner's dice beat *all* the loser's dice, this is a critical success. For a vehicle duel, this means the winner gets to act twice, once before the loser's action, and once more after it. This does mean that the winner may move and shoot twice in the same turn. It represents getting the drop on or maneuvering in such a way that you have a great (but fleeting) tactical advantage.

Everyone else on the vehicles acts normally, though passengers and gunners can be Watching for an opening to fire, which can correspond with the pilot or driver's weaving into position for their own kill shot.

The initial range for a vehicle duel is usually no more than the minimum extreme range for the longest ranged weapons of whoever rolled best. If one side is unarmed, it is no more than the minimum extreme range of the longest ranged weapon the other vehicle has.

EXAMPLE

Example: Erma Felna has six marks in Vehicle Operations *and* is a Velocity Expert. If she is piloting an aerodyne with a Maneuver of 1d12 and a Size of 2, and only does a Basic skill roll, she rolls d10 and d10 in a dogfight to see who acts first (she has d12 for her skill and d12 for Maneuver, loses 2 die types for the size of the aerodyne, and gets 1 die type back because she is a Velocity Expert). If she wins the roll and is outgunned, she can choose to move first and try to get under cover, or failing that, increase the range. If she has the advantage, she can close the range and fire before the enemy can evade.

Over the course of a 6-second turn, each 10kph in speed difference between vehicles

is about 17 meters in range gained or lost. For sake of convenience, round it to 20 meters.

EXAMPLE

Example – If Erma's aerodyne has a top speed of 750kph and the enemy craft has a top speed of 600kph, the 150kph difference means that each turn Erma tries to close the range she will get 300 meters closer, and each time she tries to escape she will get 300 meters further away. This of course presumes she is in the open where she can use her top speed to best effect. If dodging down urban streets, her safe top speed will be considerably less.

If someone doesn't want to engage, then that person automatically loses the sequencing roll, which may or may not have any real effect. If a tank wants to duel with a cargo aerodyne, and the cargo aerodyne doesn't want to play, it can simply zoom out of range in a turn or two...

Dueling Terrain

If a vehicle duel's "terrain" has obstacles that limit the speed or maneuverability of the combatants, the Game Host can set a level of difficulty for them. A low number is a terrain or situation that is only slightly restricting, while a high number is very limiting.

Terrain	Difficulty
Open terrain	1
Slightly cluttered (nap-of-earth flying)	3
Cluttered (nap-of-earth over wooded hills)	6
Very cluttered (nap-of-earth between buildings)	9
Absolutely cluttered (flying *through* buildings)	11

To "be safe", no dice rolls for sequencing or dodging enemy fire can exceed 13 minus this number. So, open terrain is a zero, and you can get up to a 12 as a die result. Absolutely cluttered terrain is a 12, and no vehicle can move fast enough to get *any* kind of maneuvering bonus. In this case, since sequencing die rolls have a maximum result of 1, who goes first is based on marks in Vehicle Operations with ties broken by Sixth Sense.

EXAMPLE

Example – If you are engaged in a chase on the ground through "very cluttered" terrain, all die rolls for sequencing have a maximum result of 13 – 9 = 4. This tends to flatten out the effects of high skills, since now no one can roll better than a 4.

If a pilot or driver wants to exceed the safe speed, they can roll their Vehicle Operations and Maneuver dice as normal for any type of terrain clutter they wish, adjusted by any die shift for the size of the vehicle, and just declare that they are "going for it". To successfully pull this off, their sequencing roll has to beat the difference between the terrain types.

EXAMPLE

Example – If you wanted to count cluttered terrain (modifier of 6) as only slightly cluttered (modifier of 3), then you succeed if any die in your sequencing roll beats a 3.

You *can* do this by Rote if you are good enough, but remember that any die shifts do affect your Rote. Whoever is being chased decides if they are going for it first, and then the pursuer has to option to do the same.

Operators suffer 1 Awe for every point by which they exceed the safe speed. It takes guts to exceed a speed you know is safe, especially when the consequences of failure are much the same as for a bug hitting a windshield. As the vehicle shudders from being pushed past its safety allowances, all passengers will suffer 1 Awe from such maneuvers. Coolness under Fire and other traits *will* reduce Awe suffered.

EXAMPLE

Example – If you wanted to count cluttered terrain (target 6) as only slightly cluttered (target 3), you will suffer 3 Awe.

Success means that you have adjusted the cap on your die results because of terrain limitations on *that* turn. It also means that you are gaining ground on or getting away from the other vehicle by 10% of your top speed, since you're exceeding the safe speed, and they aren't.

Small, fast vehicles have the obvious edge in these situations. They have a higher Maneuver to begin with, and less of a die shift to rolls because of their size.

Failing to make the roll when exceeding safe operating generally means the vehicle has run into something, and will take damage as though it fell onto the appropriate object (trees would roll fewer d20s than buildings, for instance). Just use a "distance fallen" of 10 meters for every 30kph of speed the vehicle had. A vehicle's Deflection applies normally.

EXAMPLE

Example – If Erma's aerodyne clips a building while she is going 300kph down a city street, her aerodyne will take damage as though it had fallen 300 meters! This would be a damage of 0+40, with 5d20 rolled for Penetration. This could range from scraped paint on a lucky roll to catastrophic damage on a bad one.

Characters with high skill will of course try to push enemy pursuers past the limits of *their* skill, hopefully causing them to slam into obstacles with the appropriate consequences.

COMMAND REVIEW • [illegible]

Bounding Overwatch

Remember that a character cannot Sneak and Watch at the same time. This generates the need for *bounding overwatch*. Characters move in small groups by Sneaking while a support group (the covering group) Watches or Spots (usually from Hiding) for attacks against those sneaking. Then the Sneaking group stops and Hides and Watches while the other group Sneaks to a new position for Hiding and Watching. In game terms, bounding overwatch limits a group's movement to half the lowest Sneak Rote in the group ... but it is also a tried-and-true method of advancement, both in the real world and in *Albedo.*

Infantry Rules

Here are a few clarifications and additions to the standard arsenal of rules available to the average soldier.

Following Fire

You may claim Following Fire with a semi-automatic weapon. You may not following fire at more targets in a round than you have skill marks.

Semi Automatic Expert

You must decide whether to use the 3 bullets and claim the benefits of the Gift *before* you determine if a hit is scored, not after.

Semi Automatic Master

You may not use Following Fire *after* using Semi Automatic Master, though you may use Semi Automatic Master for a following fire attack.

Skill Use by Round

Whenever a particular method of generating a skill score is chosen for an action, that same method will continue to apply until the next round unless the character spends for a retry. Any costs for pushing or risking or botching are only paid once. This is especially important for Close Combat.

Suppression Fire

Suppression Fire attacks *do* check for Botches on each attack made, even during an opponents turn. However, only the *first* attack made can cause Drive/Morale loss. Subsequent Botches simply count as a minor weapon jam and stop the Suppression fire. The character may resume shooting on his or her next turn without penalty.

Grenade "Hot Potato"

Thrown grenades normally go off at the end of the *next* turn after being engaged (not the current turn). The grenade may be picked up and re-thrown by someone else and may even be re-thrown by the character! It requires a Spot check vs. 2 (modified as normal); it takes 1 Drive and inflicts 1 Awe to pick up and throw a grenade. It is also a moderate Throw task (vs. 3 or d6). Characters may retry failed rolls including botches but each retry increases the difficulty level by the cost for a retry. If a character fails a roll and cannot make a retry, the grenade goes off on contact. Characters may take 1 Awe to hold a live grenade to throw right before it goes off to prevent a throwback but it is a Routine leadership test for a supporting character to do this (though he or she could direct himself in this manner...)

Close-Combat Mass Melee

The Awe loss from close range attacks apply only once per opponent and each opponent is counted as a separate event for countering by Coolness Under Fire or Cold Hearted.

COMMAND REVIEW • [illegible]

The Nature of Leadership

Leadership skill is a vital measure of command and control of others under stress. It is a precious, valuable, and relatively rare commodity. In practical terms, it allows supporting characters to act on their own judgment and initiative as if they were Adjutants or Main Characters. With this in mind, Lead skill has no Group Gifts that modify it. Characters can only have Lead marks by buying them directly. Otherwise, all the Admin and Emissaries staff would be better combat commanders than the actual battle leaders!

Gravity

In the basic rules, gravity is covered only with regards to falling and terminal velocity. Some of the inhabited worlds in known space have gravity far enough from the norm to have considerable effect. Also, ships under thrust may exceed or be far less than the standard 1g.

The biggest change characters will have to deal with is encumbrance. All their gear *and* their body weight is adjusted by the difference in gravity. Round gear and personal weight to the nearest kilogram. Any difference between

normal and gravity-adjusted body weight applies to their encumbrance total.

EXAMPLE

Example: Auitzotl has a weight of 43 kilograms. In a 1.1g environment he weights 47.3 kilograms (round to 47), a 4 kilogram difference. He adds 4 kilograms to the total weight of all his gear, in addition to increasing the total weight of that gear by 10%.

In a .9g environment, he gets to reduce the total weight of his gear by 10%, and then *subtracts* 4 kilograms from that amount.

Being able to work and move properly in an altered gravity environment is a use of G-force skill, but for most purposes Rote use is sufficient, as all EDF personnel have at least basic training in a variety of gravitational regimes.

Damage at Range

For simplicity's sake in the basic rules, all ranged weapons do full damage at all ranges. *This is not actually the case.* Damage drops for projectiles *in an atmosphere*, as drag slows them down and reduces their kinetic energy. At Long range, most weapons lose 2 points off both damage and penetration, and 4 points off each at Extreme range, and this can conceivably drop damage to negative values.

EXAMPLE

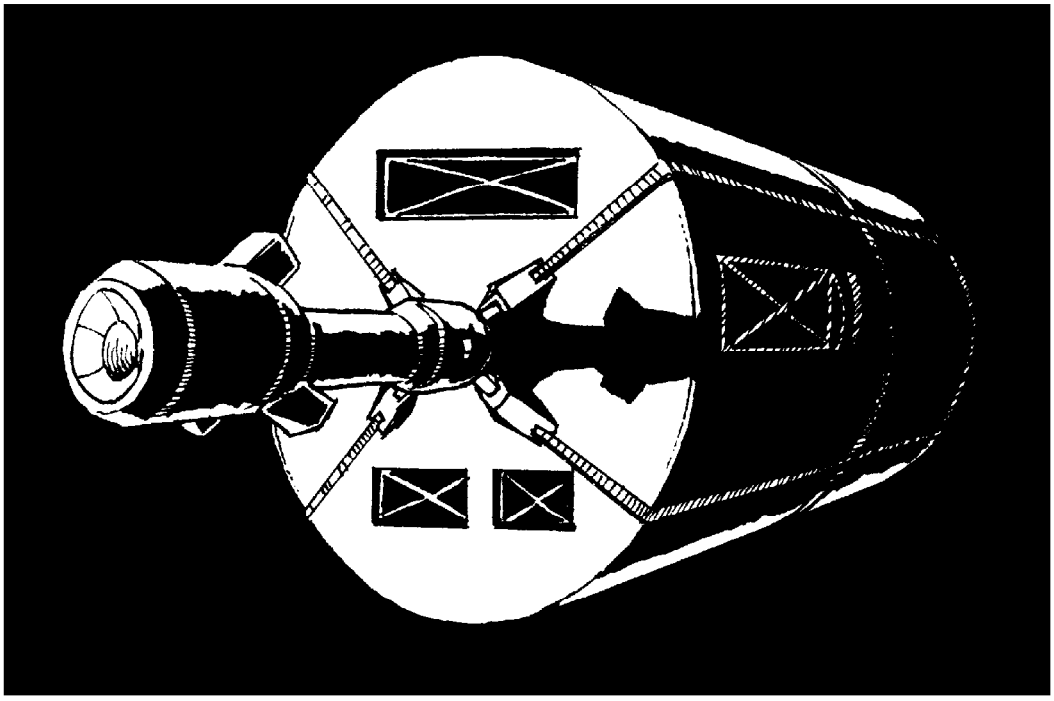
Example: So, a PAKW 4-12 pistol will drop to a damage of 6+5 at Long range, and 4+3 at Extreme range.

A successful penetration can *still* do some significant hurt. Even a nearly spent rifle bullet can still kill a person, but the average damage done will be less than for a short range hit. This rule *never* applies to explosive weapons, which always do full damage at all ranges, and kinetic weapons in a vacuum environment keep their full damage at all ranges.

Suppression Fire

To clarify, a Suppression Fire zone is always triangular – one of the points is always the firer, and no side of the triangle can be longer than the weapon's Short range (Medium if you're a Suppression Fire expert). Clip-fed weapons cannot do Suppression Fire as well as belt-fed weapons, simply because they empty their clips so quickly. Clip-fed weapons increase the effective range by one band. So, a normal Suppression Fire at Short range would have all targets count as Medium range if the firer was using up the limited ammunition in a clip-fed auto-rifle.

All hits from Suppression Fire count as Following Fire, *but only to the extent of your skill.* A Suppression Fire Expert *who is not also a Following Fire Expert* can Suppress a



triangle whose sides are Medium length, but they can only claim following-fire advantage (that is, getting an extra to-hit roll) against targets within *Short Range*.

Danger Space

Danger Space is a variant of Suppression Fire where the shooters are trying to lay down bullets into a *distant* area, often without hitting anything at shorter ranges. For instance, a slightly elevated position might let you shoot over friendly troops to fill an area, or at longer ranges, bullets can be arced so that they miss close range targets, and last, aerodyne gunships can fill large areas on the ground at well beyond the 50-60 meter Medium range of their weapons.

Making a Danger Space Attack is an action that is declared and executed in the normal sequence but the targets get to react to it. They can perform a Hide action or move 2 meters to better cover. A leader must coordinate individual troops to do a Danger Space attack (it takes an action), but an individual can use a personal or computer-linked weapons for this type of attack on their own initiative.

A Danger Space attack is a matter of weapon control and statistics. You are not aiming at anyone in particular (so no Following Fire is allowed). You are just trying to fill an area with bullets, and hope the density of bullets is high enough to hit something.

COMMAND REVIEW • ADVANCED REFERENCE

Military Jargon and Danger Space

Plunging fire is gunfire aimed so as to fall on an enemy from above, sometimes with indirect-fire weapons like howitzers, but sometimes from an elevation, other times taking advantage of a bullet's descent in gravity to fall behind walls. *Volley fire* is the simultaneous discharge of many weapons at a target zone – the signature tactic of the computer-controlled weapons of the EDF gun-ship. *Covering fire* is a Danger Space created to deny an enemy avenues of attack against your own troops (for example, an aerodyne using machine guns to cover deploying troops.) Another term for Danger Space is *beaten zone*, especially for a Danger Space maintained for several minutes as a defensive measure.

On the plus side, you add:

- The average Rote of everyone engaging in the Danger Space fire, rounding any fractions down. This will never exceed the total from steps 2 and 3.
- A factor for the rate of fire of the slowest weapon in the group doing the Danger Space fire, and how many weapons are firing.
- A factor for the type of mounting and fire control available.

Situation	Target
Semi-auto (6)	+0
Full-auto, clip fed (25)	+2
Full-auto, belt-fed (50)	+3
Rapid-fire (300)	+5
Each doubling of weapons firing	+1
All weapons are computer-linked	+1
All weapons are vehicle-mounted	+1
All shooters have Suppression Fire Expert	+1

The numbers in parentheses are how many rounds are expended during a round of Danger Space fire, and if you don't have enough, it doesn't matter as long as you are closer to the amount you need than the next lower amount.

An individual with a pistol contributes nothing to a Danger Space attack made by soldiers with assault rifles. The one with the pistol can be ignored. He may fire, but will contribute nothing to the total."

Computer-linked weapons are those with automatic aiming servos controlled by a computer at a single weapon station using Vehicular Weapons skill. *Vehicle-mounted* weapons are those which are permanently mounted to the vehicle for stability in aiming, though tripod-mounted weapons usually qualify as well.

You *can* get both bonuses at once (like a twin heavy machinegun turret), or only one (like a pair of pintle-mounted weapons fired by individual gunners).

EXAMPLE

Example: If you have two infantry with belt-fed support weapons, those two factors add up to 4, so the average marks these gunners apply cannot exceed 4, for a maximum possible total of 8.

Then you subtract a factor for the range and the size of the area you are laying the Danger Space into. The closer the range, the more shots you get into the area you are trying to fill, and the smaller the area you are filling, the more concentrated the fire. If you are firing vehicle weapons *and* the vehicle is evading, you increase the range by one band, and apply a –2 penalty to reflect that your weapons simply will not be pointed at the target for the whole combat round. If firing *handheld* weapons from a vehicle, increase the range by *two* bands and apply the –2 penalty.

Circumstance	Modifier
Firing vehicle is evading	–2
Close range	–2
Short range	–3
Medium range	–4
Long range	–5
eXtreme range	–6
Small area (size of a house)	–0
Medium area (size of a large intersection)	–3
Large area (size of a city block)	–6

The "small" area is what you would use to target a single vehicle, a fire team or tightly deployed squad. "Medium" would be a dispersed squad or a few vehicles, and "large" would be an area occupied by a dispersed platoon.

The result you get is the "number of marks" in the attack, which is always rolled as a regular skill. If there are zero marks or less, there is no effect. If there are 1 to 5 marks in the attack, you do a Basic skill roll against the defenders. Botches have no effect other than being a waste of ammunition. However, if there are *more than* 5 marks in the attack, the Game Host can simply declare that anyone who is not under 100% cover is *automatically* hit at least once. Vehicles apply their size modifier to this, so for instance a vehicle with a size of 1 would be automatically hit if you had 4 marks in the attack. Each mark *beyond* that needed for an automatic hit (6) counts as a critical hit, worth an extra d20 Penetration. You only roll one hit, but it actually represents getting hit several times.

EXAMPLE

Example: If your numbers add up to "7 marks", then any people in the open are *automatically* hit once, and this hit is with +1d20 on Penetration. A vehicle with a size of 1 would take +2d20 on Penetration.

These extra Penetration dice mean that even weapons which do not or cannot individually get through armor can still clean off external sensors, bludgeon a person into unconsciousness, or actually start shredding the armor off a vehicle (especially the improvised kind). These extra hits can be especially important with small-arms against vehicles, since the extra Penetration dice can offset the -2d20 Penetration penalty for vehicle armor that is otherwise too tough to get through.

For reference, 5 marks in this calculation represents about 1 bullet for *each* square meter of the target area. Statistical distribution may leave gaps big enough to miss a person, so they still get 1d12 defense against the 1d12 attack. Each ±1 mark doubles/halves the bullet density. So, "6 marks" means about 2 bullets striking each square meter in the target area, and at this level and higher it is possible but increasingly unlikely there will be any holes in the pattern of fire that would actually miss an exposed person, so dice in defense become useless. For reference, a person has a frontal surface area of about one square meter.

Defenders automatically get the chance to dive for any cover within 2 meters of their position when attacked by Danger Space fire. If defenders are not subject to automatic hits, then everyone in the area, friend or foe rolls d12 for defense, plus any partial cover die. Vehicles apply their die shift (and thus roll d10 or less); maneuver or concealment does not apply.

Note that at shorter ranges with few weapons, Danger Space is not as good as what a Suppression Fire Expert could do ... but if you don't have a Suppression Fire expert, you do what you can.

Simply being in a Danger Space area causes Awe: typically 3 points less than the marks in the attack. Targets with 100% cover suffer a maximum of 1 Awe, provided that cover is sufficient to stop the weapons being

used, otherwise they suffer +1 Awe in addition to any effects from being hit by the fire.

EXAMPLE

Example: A D-9 gunship mounts eight HAKW 1-100 guns and two VAKW guns. The HAKWs are fired with one Danger Space roll. If the target area is the size of a large intersection at Long range and the gunner has a Rote of 6 with the weapons, you have:

- Skill (5)
- Rapid-fire guns (+5)
- Three doublings (+3)
- Computer-linked (+1)
- Vehicle mounted weapons (+1)
- Long range (-5)
- Medium area (-3)

Total: 7

This gives the gunner "7 marks", or one automatic hit against every exposed target in the area, with +1d20 Penetration on that hit. There is not a single spot the size of a person in that entire city block that isn't taking *at least* one bullet, making any sort of dodging irrelevant. Only those who dive under complete cover are spared, and even they are Awed by the volume of fire coming down.

The VAKWs would be fired the same way, and if dispersed over a similar area would have 5 marks or a d12 roll, which would hit a good fraction of any exposed defenders. Keep this up for several rounds and the casualties will be almost total.

Gunships are rightly feared, and the only reason they do not completely rule the field is that they cannot carry enough ammunition to sustain their carnage. A single combat round of fire from this gunship expends *three thousand* rounds of ammunition! If this were delivered into the smallest Danger Space area, it would be 30 bullets per square meter, with Penetration of +4d20 more than normal.

Keep in mind that any land vehicle that mounts a twin machinegun turret will get the multiple weapon and vehicle weapon bonuses. This would commonly be the 8mm and 6mm twin MG turrets used by the EDF and ILR, respectively.

Like Suppression Fire, anyone who does anything except Hide in the Danger Space area is subject to an automatic attack as long as the Danger Space is maintained.

An Indirect Fire Expert can make or direct others to make a Danger Space attack over friendly troops or obstacles to lay a beaten zone further downrange. Unless you already have a height advantage, this can only be done at Long or Extreme range, and the damage and penetration of the weapon used are both reduced by 4.

Steel Rain

There is not a lot of artillery in *Albedo*, but there *is* enough of it to worry about. In addition, characters have ready access to grenade launchers, which can be used in an indirect fire mode.

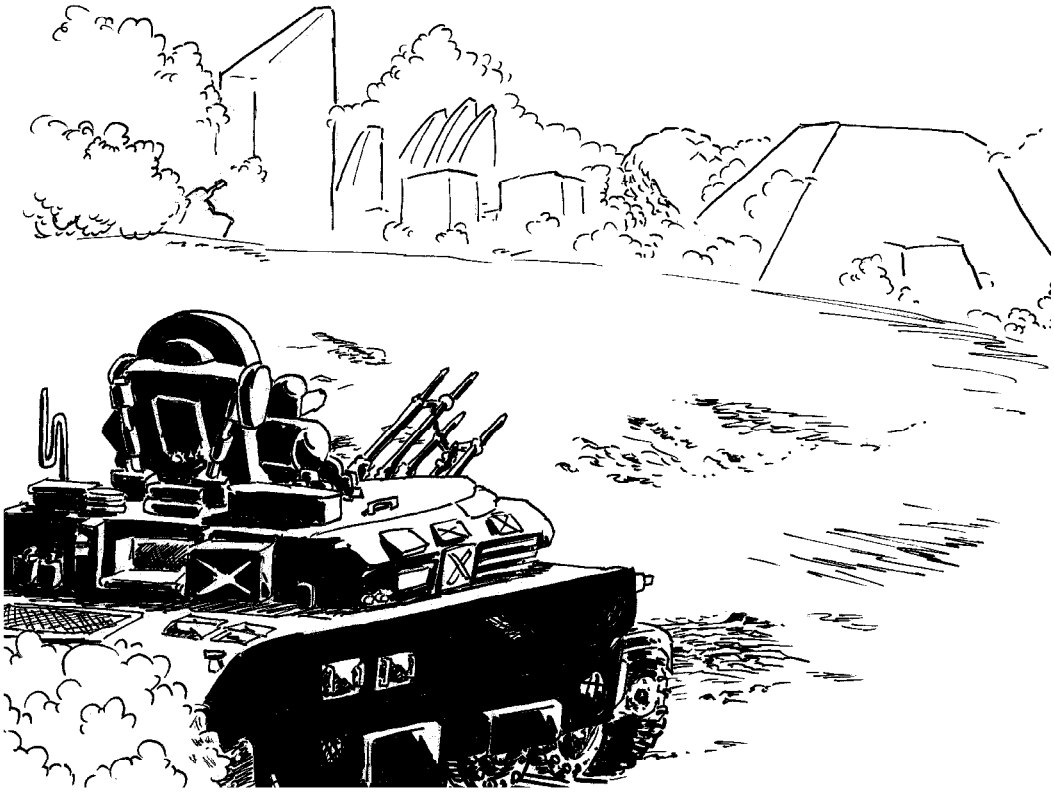
New Gift: Indirect Fire Expert:

This Gift is a Basic Gift that covers the proper use of weapons fired to a location that is not directly seen by the firer. Weapons under the direction of an Indirect Fire Expert (which can be a single weapon fired by the Expert or a weapon under his direction or a battery of weapons under his direction firing at the same target) hit on ties instead of scattering.

Indirect Fire Expert is also required to direct a Danger Space Attack at an unseen beaten zone or over intervening obstacles that would normally be hit.

An indirect Fire Expert can also spend a Drive to allow the person observing for him or for himself to successfully make Navigation skill rolls on a tie as they relate to Indirect Fire.

Indirect fire weapons use Heavy Weapons or Vehicle Weapons skill, depending on whether it is handheld or vehicle mounted. To provide directions to a third party to accurately aim indirect fire weapons is a use of Navigation skill, normally a Routine task, but if there is anything tricky involved, like bad weather or a need to avoid certain targets in the zone, it can be an Intermediate task. A spotter with Navigation allows the spotter (who *can* see the target) let the gunner (who *cannot* see the target) fire using only the concealment or visual cover modifiers the *spotter* is affected by.



Indirect fire lands the turn *after* it is fired. That is, you fire it and make your roll, but the defenders make their roll on the following turn. *This could be good.* You could time it to land just as the enemy infantry makes their dash from cover to cross the street. *It could be bad.* You could be few seconds off the mark and fire it while they are in the street, and it doesn't land until they are under cover again.

Large projectiles like mortars are likely detected by someone on your side the instant they are fired, with information passed through channels to alert the most probable targets, giving them time to seek cover, if not leave the immediate area. Small projectiles like grenades are almost impossible to spot unless you are Watching for them, but if you can spot them, your battle software can probably tell the general area they are aimed at. Grenade launchers and mortars have a distinctive sound, so even if you are not Watching for them, you can choose to act as you feel appropriate when you hear one fired. *It might be headed your way, it might not...*

Massed indirect fire is six or more rounds landing in an area on a given turn. This can be one aim point, or several aim points that form a line. In the case of one aim point, the *least* skilled gunner rolls to hit, and the grouping is treated as *one* explosion with +1 meter to the radius and +1 Awe to the effects. In the case of a line, two endpoints are chosen five burst radii apart (so a 2m explosion would be a line 10 meters long). Damage is measured as a blast distance from the line, not a point.

Dispersion

Thrown grenade dispersion is covered in the main rules. For dispersion from weapons like grenade launchers or mortars, if you miss by 1, the shot is off by 6 meters. The shot just barely lands within a useful distance of the aim point. Missing by 2 or more means that at best it lands in ear-ringing range (6 meters per point missed by), but is unlikely to actually hurt whoever it was aimed at unless it was a *large* barrage. If the dice rolled to hit are even, it overshoots. If odd, it undershoots, and on a Botch it *really* undershoots. Numbers also divisible by 3 deviate to the right,

and those also divisible by 4 deviate to the left. A roll of 12 that manages to miss is a simple overshoot.

For weapons capable of semi-automatic fire (specifically, the GAKW), if a burst is fired using indirect fire, they can either all be designated to land on target, or be "walked". The grenades will land 6 meters apart in a direction chosen when the grenades are fired. On a hit with the first grenade, assume the remaining two land 6 and 12 meters further away. You have to decide to walk your shots *before* you fire.

EXAMPLE

Example: Emphiro has 2 marks in Heavy Weapons and is using a grenade launcher in an indirect fire mode. He ends up needing to beat a target number of 5. He Pushes his skill to roll 2d6, and gets a 4 and a 5. The 5 is a near miss, which is off by 6 meters. For a normal grenade with an explosion of 2m, this means it loses 4d20 off its penetration roll. Since the roll was odd, and is not divisible by 3 or 4, it is a simple undershoot that plows up the dirt 6 meters short of where he aimed. He looks at his sight, thumbs in a slight compensation, and reaches for another grenade. If he had fired a three round burst from a semi-auto grenade launcher and said he was walking the shots away from his position, he could have put the second on target, since the first hit landed 6 meters short. The third would have landed 6 meters long.

Indirect fire weapons have certain inherent advantages and requirements. We've already noted the time delay and how that can work for or against you. While mortar crews are trained specifically in indirect fire tactics, normal infantry supporting characters will use direct fire with their grenade launchers unless specifically directed otherwise.

You can get a direct hit on ties with artillery or indirect fire if you are an Indirect Fire Expert.

Indirect fire can shoot *completely* blind, such as over buildings. This *always* counts as an extreme range shot, but if you know *where* the target is hiding, they only get a cover modifier based on where you want the grenade to land, not the cover they have from your direct fire. If you are shooting blind but there is the possibility of negating their cover with a good shot, they only get 1d12 for 100% concealment instead of 2d12.

Shooting at a target you can't see directly requires some sort of advance intelligence or remote sensing. It is a routine Navigate or Sensor Operations task to send coordinates and other targeting information to a weapon other than the one you are using. A spotter with a pair of binoculars or a remote camera can send firing solutions to someone else who cannot actually see the target.

A target can pre-designated for an indirect fire mission. This usually requires 2 Quality-hours of time by an indirect fire gunner and someone with Navigation skill, and is only an Intermediate task. While it can mean firing completely blind, the difficulty is normally a maximum of 2d8 at Long range and 2d10 at Extreme range. This benefit is kept only as long as the indirect fire unit stays emplaced. Once they pack up and move, the process has to be repeated.

Most EDF indirect fire weapons, including rifle grenades, can be set with a time fuse accurate in milliseconds, an impact fuse, or a ground proximity fuse that can be set anywhere from 1 to 4 meters. The accuracy of the proximity fuse varies with the radio-reflective characteristics of the ground.

Airbursts, whether timed or proximity-detonated can be used to negate up to 25% cover if used properly. For instance, if someone is hiding in a slit trench, they have much less protection against an airburst than a

COMMAND REVIEW • ARMADA DEFEND

Stray Bullets

Not every bullet fired in a Danger Space attack lands in the target area, and you do not necessarily get your weapon's maximum rate of fire for the combat round. Vehicle maneuvering may throw your aim off, you might not have started the attack with a full clip and ended up emptying your weapon halfway through, and so on. The "bullet leakage" outside the target zone means that the EDF will not generally use Danger Space fire if there is the potential for friendly fire casualties. If you want to model this, apply a leakage zone of up to double the target radius, with one-quarter (round up) the marks of the main attack.

ground burst.

If an indirect fire weapon is spotted when it fires, it not only means the projectile is detected, it means the nearly exact location of the firer is also known. If the people you are shooting at also have indirect fire weapons, this could become very interesting, starting about 3 turns from when you fired (1 turn for them to notice, 1 turn to shoot back if they're on the ball, and 1 turn for it to get there).

Grenade Tricks

The EDF variable grenade, as used in a grenade launcher, can be creatively programmed. Specifically, you can use the weapon's laser rangefinder to determine the exact range to the target, and use that distance to program an exact detonation time for the grenade after firing. This allows you to get proximity hits on aerial targets, or to detonate grenades *above* an enemy, rather than against the cover they are hiding behind. This can possibly negate some cover an enemy might have, or allow a hit on ties against aerial target when ties would normally be a miss. Supporting Characters will not normally attempt creative grenade tricks without an officer to suggest it.

Rigging Booby Traps

Characters can rig grenades and other devices with tripwires. A booby trap is a single-use attack roll using the Demolition skill of whoever placed it to trigger if someone meets the activation condition. This is a target number of 4 (an Intermediate task), and can only be done with a Basic skill roll (it is not a standard tactic). The person placing the booby trap can lose 1d20 off the penetration of an explosive weapon to get an extra mark on their skill. That is, you set up something that is more likely to go off, but is less likely to do so exactly where and when you want it to. A standard setup (no loss of Penetration dice) means that it is set up to go off instantly, within a meter of the person setting it off.

In addition to rolling whenever someone triggers the booby trap, any improvised device like a grenade requires a Routine task when placing it (target of 2). A Tie means you have time to get out of the blast radius before it goes off. A Failure is a recoverable error. A Botch means your device triggers while you are still in its designed blast radius.

Once the device is placed, it simply waits for someone to come by, at which point it uses the Demolitions die roll used to place it. A failure to detonate means that the person who passed through the area simply failed to trigger it. A Botch means they triggered it, it didn't go off *and* they spotted it. A tie means the booby trap goes off, but with 2d20 less Penetration.

EXAMPLE

Example: Chara hides an ILR grenade under some debris and runs a trip wire across the hallway. Chara only has 1 Mark in Demolitions, so she sacrifices 2d20 of the grenade's Penetration to put together something she hopes will work (giving her 3 marks, for a Basic roll of d8). With a lack of Demolitions skill, she doesn't know what height is best for the trip wire, or the best delay setting for the grenade based on its position and where the tripwire is. Provided she doesn't blow herself up while placing the grenade, she gets a 1d8 roll for each person who passes.

The target number for tripping the booby-trap is 4. On a roll of 5, 6, 7 or 8, the grenade goes off and catches the person in the 3d20 Penetration range for the grenade. On a 4, it goes off late and only gets 1d20 Penetration. On a 2 or 3 they step over the trip wire without setting it off, and on a 1, they hit the tripwire and snap it without triggering the grenade.

Detecting a booby trap uses Search, Demolitions, Sixth Sense or Spot skill, whichever is highest. The basic difficulty for spotting a booby trap is 3 + the actual score in Demolitions of the person who placed it has. If the Rote score in the highest of these would succeed, suspicions will be aroused when entering the booby-trapped area, even without spending an action to look around. However, it will still take an action to actually spot the device or its trip mechanism.

Example: Since Chara had only 1 real mark in placing the booby trap, it is a target number of 3 + 1 = 4 to spot it.

EDF policy discourages booby-traps and mined explosives, especially in civilian habitations. Terrorists, insurgents, and ILR troops have fewer reservations.

Homing Weapons

Some weapons have inherent course correction ability. As these are most often weapons that also have explosive potential, it means they can miss, but still detonate within a useful distance of the target. Explosive weapons with homing capability can sacrifice 2d20 from their penetration roll to get +1 on the best die rolled to hit, for a maximum of +2 to a die roll. In the event that such a weapon is used against a civilian vehicle with a readily spotted signature and no inherent EW capability, the penalty is only 1d20 per +1 to the roll, with a maximum of +4 to a die roll. Using guided weapons against civilian air transport is an easy task for even marginally skilled troops.

This rule is especially applicable to weapons used against airborne targets, which would otherwise be limited to contact hits only.

Homing weapons will have a particular method of operation, and will not get their bonus against targets that do not meet the targeting criteria. In fact, lacking an appropriate target when firing is a sure way to confuse a homing munition, as it seeks fruitlessly for something to head towards.

Many homing weapons are sophisticated enough to be programmed before firing to only seek specific target characteristics, or to ignore specific target characteristics. So, a missile that homes in on radio emissions could be told to ignore signals from small aerodyne radars or to only go after signals common to giant landing aerodynes.

Electro-Magnetic Pulse

EDF, ILR and to a lesser extent civilian technologies are naturally resistant to low levels of electromagnetic interference, simply because of the widespread use of optical circuits. The military gear used by ILR and EDF forces is designed to work in an environment crawling with jamming signals and electromagnetic interference, and is hardened against any effects likely to be found in the ambient environment. However, this does not make them invulnerable to *directed* short range effects. And since every piece of sophisticated hardware relies on even more sophisticated circuitry, something that damages or temporarily disables electronics can be a powerful weapon.

Any device or weapon capable of generating an EMP will have a damage and penetration value, just as other weapons do. These values *only* affect electronics and computerized or computer-assisted devices. This can range from the night vision sight on a rifle to the intermix compensator on a fusion reactor.

For ease of use, there are three levels of protection an electronic device can have against outside interference, and this is identical to Deflection for armor. Civilian devices have a Deflection of 6, military devices and civilian vehicles have a deflection of 12, and military vehicles have a Deflection of 16. In general, civilian electronics have a damage threshold of 10/20/30/50, and military electronics have +10 on the thresholds.

The biggest difference between EMP damage and normal damage is that the self-diagnostics, redundancy and re-routing algorithms in virtually every device mean that effects are generally temporary. That is, you *do not* keep track of wounds for devices from EMP damage. *If you use the rule at all*, it applies separately every time, and only permanent effects need be dealt with.

A Wound on an electronic device is a re-

COMMAND REVIEW · ADVANCED NETCOM

EMP in Game Play

Because it doesn't actually stop someone from fighting, neither side has any major deployment of EMP bombs, and so these rules are not something that is going to come up in play very often. A gun with its electronics fried can still kill you, and a crack gunner without access to a targeting computer can still hit you. Freefall Infantry can use them as a decompression-safe means of disabling enemy electronics. Virtually every EMP device short of an enhanced fusion warhead requires near contact to the target to have any chance of working.

boot. The induced spike through the various inputs acts like a Botch. For a soldier, communications are garbled, vision enhancement is full of static, directional displays and rangefinders give inaccurate readings and medical monitors may send unusual results to any monitoring systems a squad or platoon leader might have for the individual ("what do you mean, he's pregnant?"). Any sophisticated electronics on a solder go down for one turn. A simple generalization of this is to reduce the user's skill by 1 Mark for their next action. (If this reduces Marks to zero, the individual is in way over their head.) One or two minor functions on a soldier's integrated systems may actually be disabled. A suit's outside temperature monitor may have been fried, or communications circuits now have an annoying hum or hiss in them. A vehicle will take 1 Body. There is no inherent permanent effect, but there are fried circuits that have to be repaired, and this will take time.

A Crippling effect means *something* broke. The character, equipment or vehicle takes the effect of a Botch, and the effect does not go away. For vehicles, the location rolled for the hit indicates the general nature of the malfunction.

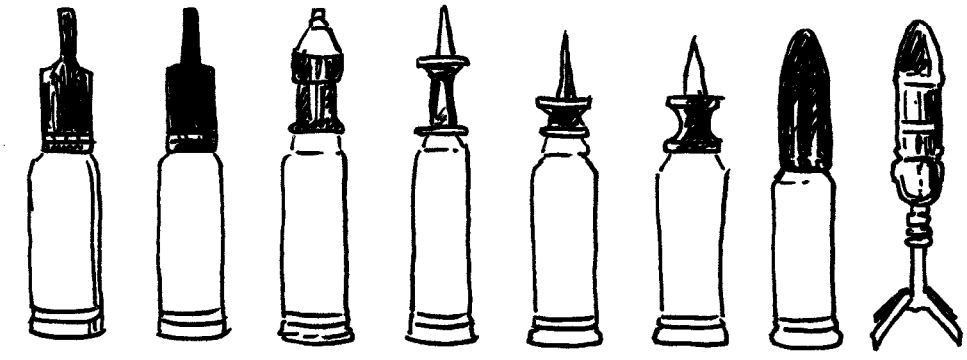
A weapon enhancement might be kaput, a hand computer might be fried (though its non-volatile data is recoverable), or comm links might be down. On a vehicle, a particular fly- or drive-by-wire system might be offline, a particular sensor could be down, or an electronic linkage of some unknown nature might have been compromised, like the landing gear. Vehicles lose 3 Body from the hit, like for any other Crippling damage. Crippling effects can be fixed by damage control in the field.

An Incapacitating effect is a widespread system failure, followed by a failure to reboot. Something major no longer works at all. A mechanical system may be virtually intact, but still completely non-functional, as much as a car would be if you yanked out the electronic ignition. An Intermediate task check is needed to reboot the damaged system, which takes at least a turn, and only the most basic functionality in the damaged system or subsystem comes back on line. Vehicles lose 5 Body from an Incapacitating electronic hit. Incapacitating effects require major repairs beyond the scope of most field damage control.

A Devastating EMP result completely fries all sophisticated circuits in the affected device or vehicle. This result is virtually impossible to get on modern military hardware, and is what might be expected from an EMP-enhanced fusion explosion, or being at ground-zero of an EMP device's detonation.

Statistical Hits

Sometimes, for the sake of plot development, you want to get an idea of hits or casualties, and don't want to roll a huge amount of dice to figure it out. For instance, if a gunship lays down a barrage on an enemy formation. The easiest way to do this is to assume that the attacker rolls average, and the defenders roll average. Cross-reference the attacker's die type(s) with the defenders, and read the result. The rows and columns cannot cover *all* the possible die combinations, so you use the *best* die rolled, and if they get more than one die of *more than* half this level, count it as 2 dice of the highest type. If you have three dice of the same type, count it as 2 dice of the *next* highest type. If the attacker wins on ties, shift their best die up



by one type. The color result represents the percentage range of targets that are affected by the weapon.

EXAMPLE

Example: A defender with d12 and d6 would be on the 1d12 column, while a defender with d12 and d8 would be on the 2d12 column and a defender with d6, d6 and d6 would be counted as 2d8.

Attacker's Dice	Defender's Dice									
	1d4	1d6	2d4	1d8	1d10	2d6	1d12	2d8	2d10	2d12
1d4	25%	10%	10%	10%	10%	10%	5%	5%	5%	5%
2d4	50%	25%	25%	25%	10%	10%	10%	5%	5%	5%
1d6	50%	25%	25%	25%	25%	25%	10%	10%	10%	5%
1d8	50%	50%	25%	25%	25%	25%	25%	10%	10%	10%
1d10	75%	50%	50%	50%	50%	50%	25%	25%	25%	10%
1d12	75%	50%	50%	50%	50%	50%	25%	25%	25%	25%
2d6	75%	75%	50%	50%	50%	50%	25%	25%	25%	25%
2d8	75%	75%	75%	50%	50%	50%	25%	25%	25%	25%
2d10	90%	75%	75%	75%	50%	50%	50%	50%	25%	25%
2d12	90%	90%	90%	75%	75%	75%	50%	50%	50%	25%

Penetration	Deflection								
	8	9	10	11	12	13	14	15	16
1d20	50%	50%	50%	25%	25%	25%	25%	25%	10%
2d20	75%	75%	50%	50%	50%	50%	50%	25%	25%
3d20	90%	90%	90%	75%	75%	75%	50%	50%	50%
4d20	90%	90%	90%	90%	75%	75%	75%	50%	50%
5d20	90%	90%	90%	90%	90%	90%	75%	75%	50%

EXAMPLE

Example: An aerodyne with a brace of autocannons cuts loose with some Danger Space fire into some ILR infantry surrounding an AA position on top of a parking deck. The gunner has a roll of 1d10, and the defenders are counted as 1d12. Consulting the table above, approximately 25% of the defenders are hit by the burst of fire. Given the damage of a VAKW, odds are good that 1 in 4 of the infantry suffer Devastating hits – the Shock and Awe inflicted will probably drive the survivors to panic or to surrender.

If you have to deal with things like massive numbers of automatic hits and multiple Penetration dice vs. armor for a large number of targets, use the second table. The percentage result is the chance of at least one Penetration against the armor for the listed number of Penetration d20's rolled. This table is mainly useful if even a single Penetration will incapacitate someone, like heavy machinegun fire vs. infantry. So, if 50% of targets are hit with Danger Space fire, and you can see that better than 90% of those hit will be incapacitated, it gives you a quick idea of how long (or short) this engagement is going to be.

This is not something that should be done to main characters or supporting characters. You probably should not be using massed fire against them anyway, but if you do, their results should be individual, not a matter of just being a statistic. Their individual circumstances and initiative can and should make a lot of difference.

Species

There are over 160 distinct species recognized by the Confederation of Worlds, but only 19 are in the basic rules. The following guidelines should help you to correct that oversight. These rules will not generate the basic species, but will let you create new ones that are on the same footing in terms of ability.

The 19 species listed in Albedo are simple on the face of it. They have a total of 28 points between their attributes and skills, and

one Gift. But if you look closer, you will see that Clout and Drive do not vary much from the 6-8 range. The main difference is Body, and the rest is Homeworld, Personality and Branch of Service.

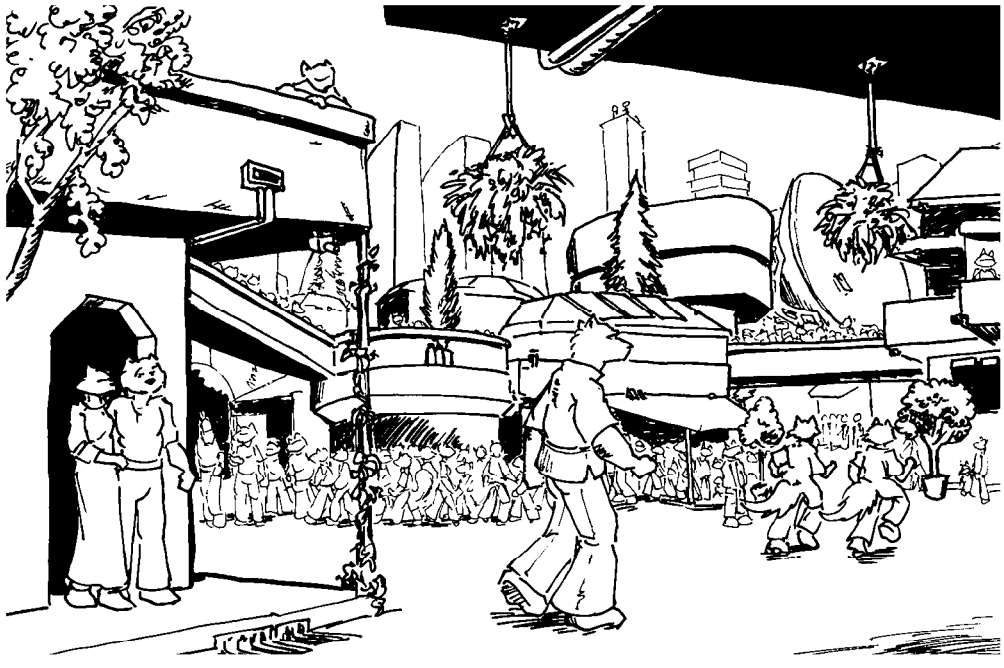
To design a new species, you can just assign a Clout of 7, Drive of 6, and then have a Body and skill bonuses that add up to 15, or use the following system.

A species will be defined as one of five size ranges, and then will have modifiers to attributes based on other factors.

Aspect	Body	Clout	Drive	Basic skills	Possible Gifts
Size					
Very Small	4	7	6	+7	Energetic Fast Small
Small	6	7	6	+5	Small Fast
Average	8	7	6	+3	
Large	10	7	6	+1	Large Tough
Very Large	12	7	5	0	Healthy Large Tough
Diet					
Omnivore	-1	+1		+1 Sneak +1 Hike	Belligerent Conformist Energetic Indefatigable
Herbivore	+1		-1	+1 Run +1 Hike	Conformist Cosmopolitan Grace under pressure Indefatigable
Carnivore				+1 Brawl +1 Sneak	Belligerent Energetic Overconfident Strong
Daily Cycle					
Diurnal				+1 Impress, +1 Spot	Charismatic Congenial Indefatigable Natural leader
Nocturnal				+1 Smell +1 Listen	Conformist Indefatigable Quick loading Suspiciousness
Environment					
Arboreal				+1 Climb +1 Jump	Ambidextrous Charismatic Overconfident Velocity expert
Subterranean		-1	+1	+1 Brawl +1 Smell	Belligerent Coolness under fire Indefatigable Suspicious

Aspect	Body	Clout	Drive	Basic skills	Possible Gifts
Activity					
Active				+1 Run +1 Brawl	Energetic Healthy Impulsive Velocity Expert
Sedentary	+1		-1	+1 Listen +1 Spot	Conformist Grit Healthy Tough
Speedy				+1 Run +1 Spacesuit +1 Swim +1 Vacuum Suit	Ambidextrous Energetic Fast Impulsive
Mean					Belligerent Cold-hearted Grit Tough
Social					Charismatic Congenial Gadfly Young
Stoic					Conformist Cosmopolitan Indefatigable Old

This is the basic template. The skills represent the total number of marks that species gets for free with no more than 2 marks in any one skill. This 2 mark limit may be modified later in the process. The very largest creatures have to delete one of the skills they get for free for their physical characteristics, which is next.



Characteristics

After you have the basic size of the species, choose two characteristics. No two characteristics can be on the same line.

These characteristics have convenient names, but you should not assume that your species exactly matches the typical image associated with the name. Think of them as *mostly* appropriate tags to apply to collections of traits.

EXAMPLE

Example: A "diurnal" species has +1 Spot and +1 Impress. This just means they are used to operating in daylight and rely mostly on sight. Used to visual displays as part of mating, they have a natural ability to project a good self-image.

Most of the time, any movement skill like climb, swim or jump can be substituted for "+1 Run". With Game Host approval, social Gifts of similar nature may also be substituted, like being Congenial instead of Charismatic.

Once you have all this information figured out, you have the template for the species. Not all species are created equal. If you duplicate possible Gifts, you do not get anything extra to compensate.

Physique

Characters will vary in size and weight based on species, but a generalization is below:

Body	Height	Weight
3	90cm	15kg
4	96cm	21kg
5	104cm	29kg
6	114cm	39kg
7	126cm	51kg
8	140cm	65kg
9	156cm	81kg
10	174cm	99kg
11	194cm	119kg
12	216cm	141kg
13	240cm	165kg
14	266cm	191kg
15	290cm	219kg

Only count Body adjustments for Old or Young towards weight (not height), and add +1 Body for Strong *or* Very Strong for weight purposes, and another +1 Body for Tough *or* Very Tough(e.g. Very Strong and Very Tough would only be +2 Body for weight purposes).

EXAMPLE

Example: You have an idea for a character who is a Wolverine (a Mustelid, the largest member of the weasel family). We'll say our character, Gulo, is of Average size:

Body: 8 Clout: 7 Drive: 6

Possible gifts: none at this point

Wolverines get +3 in basic skills. We figure wolverines are feisty and good in a fight, and we look up some data and see that they can climb, have a pretty good sense of smell and hearing and a lot of endurance. So, out of these possibilities, we decide to start with basic skills of:

+1 Smell
+1 Brawl
+1 Climb

Then, we apply creature type modifiers. Wolverines are mostly nocturnal carnivores, so we choose both of those types, and the "Mean" row seems right for other possible gifts. So, we end up with a basic wolverine template of:

Body: 8 Clout: 7 Drive: 6

Increase all skills:	*Choose one gift:*
+2 Smell	Belligerent
+1 Climb	Energetic
+2 Brawl	Overconfident
+1 Sneak	Strong
+1 Listen	Indefatigable
	Conformist
	Suspiciousness
	Quick loading
	Cold-hearted
	Grit
	Tough

Cybernetic Enhancements

Cybernetics in *Albedo* is simply a replacement technology instead of an enhancing one. However, it is not perfect, and there *are* liabilities. Even with advanced batteries, cybernetic limbs require regular charging, anywhere from once a week to once a day, depending on the level of use. This is a problem, but not one sufficient to pull an experienced soldier from active service. A flexible solar overlay that can be worn on the back of combat armor can supplement and eventually recharge a limb's battery, and a minute or two plugged into a

vehicle or civilian outlet will provide a full recharge. The EDF *does* encourage infantry with cybernetics to retrain for mechanized or aerodyne service, where there is always going to be a ready power source.

Starting characters are discouraged from having cybernetics, as they will have plenty of opportunities to have limbs violently removed in play. However, if the Game Host allows, accepting the liabilities of a cybernetic arm or leg has two compensations. First, the character gets +1 mark in any skill, something they picked up during their rehabilitation. Second, if hit locations are used, the character never suffers *actual* Wounds from being hit in the cybernetic limb. There is pain (and Awe) and the effect on the character's ability to function is much like a flesh and bone hit, but the character loses no Body, nor are extra d20's applied to future hits to the biological body because of previous damage to cybernetics. If hit locations are not used, this effect is ignored.

Carrying Capacity

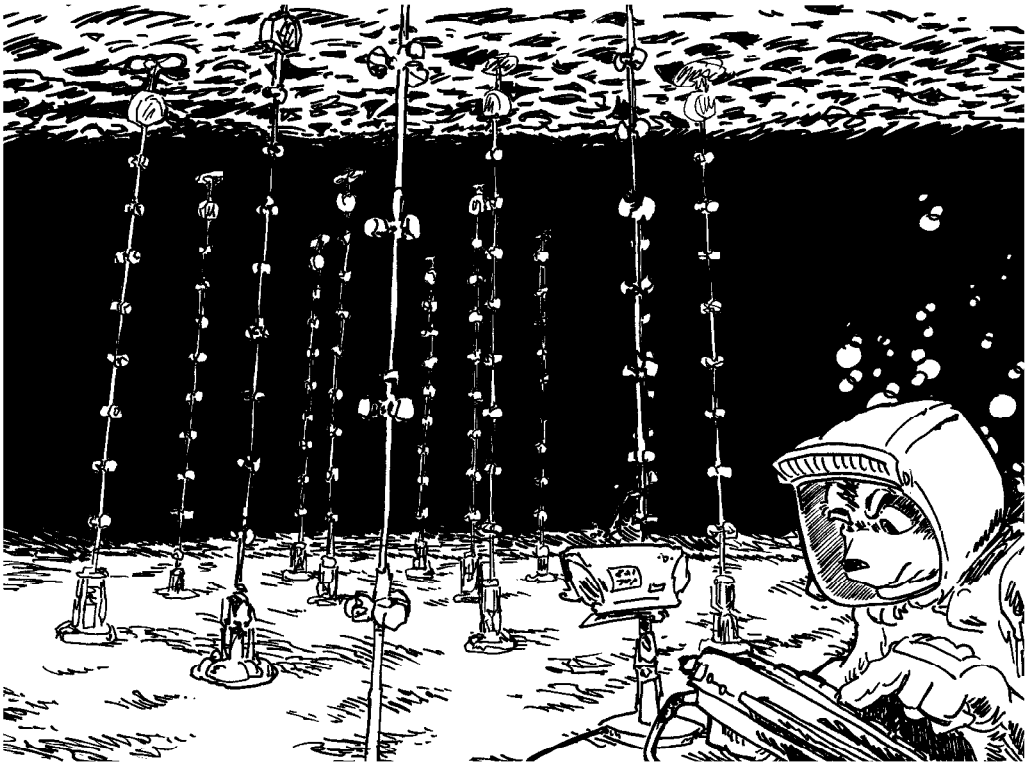
Characters have a normal unencumbered load of double their Body rating, and the ability to lift five times their Body rating over their heads. To elaborate on this:

Status	kg load
Unencumbered	up to 2x
25% run penalty	up to 3x
50% run penalty	up to 5x
75% run penalty	up to 7x
Maximum lift/drag	up to 9x
Lift over head	up to 5x
Pull yourself up	up to 4x

Penalties round towards the nearest speed. The maximum lift/drag is what you can move up to 3 meters in a turn if you are using both hands and not trying to be stealthy or combat-wise. Otherwise, it is an amount that you can grab and drag a meter or so in the heat of combat, like yanking a wounded comrade into a sheltered area.

The normal rules for getting tired when running apply, but characters who are weighed down can cover less distance during the ten rounds of running they can manage without rest.

Characters with Hike have better endurance and physical conditioning than normal and can subtract their Hike Rote Score from 12 to get the rounds of rest normally needed after a long run. Since everyone has at least 1 mark in Hike, the default means a person



has to rest 10 rounds after sprinting, as normal. In practical terms, every mark in Hike after the first gives a character a about an extra hour of sustained march time per day.

EXAMPLE

Example: Auitzotl has six marks in Hike. After 10 rounds of sprinting at full speed, he only needs to rest for 5 rounds instead of 10. In terms of how far he can march in a given day, he can march default troops into the ground, still fresh when lesser sapients are ready to pass out from exhaustion.

Characters in spacesuits use Spacesuit skill instead of Run skill for extra movement but the Fast and Very Fast Gifts apply to the Spacesuit skill modified speed. Light spacesuits automatically reduce run distance as if the person was 1 level more encumbered and heavy ones as if the person were 2 levels more encumbered.

EXAMPLE

Example: Auitzotl has four marks in Run (Rote Run of 15 meters) and a Body of 9 for an 18kg unencumbered Carry. If he is carrying normal armor (9kg), a 24 hour kit (about 14kg), a LAKW-1-30 rifle with grenade launcher (3.5kg) and PAKW 4-12 pistol (.75kg), then he has a total load of a hair more than 27 kilograms, which is in the –50% run penalty range (more than 3x Body but less than 5x Body). This gives him a Rote running distance of 7 meters. In addition, we can see that he is in the range where he can pull his entire body and kit up and over an obstacle (less than 4x Body). If Auitzotl dropped his 24 hour kit (except for the ammunition, of course!), he would be down around 16-18 kilograms, which means he would not be encumbered at all. If he dropped the machine pistol, he would be under 27 kilos and only have a 25% penalty, which for him would be a Rote running distance of 11 meters.

Sustained March

The normal movement rules take into account the sit & dash nature of moving around when people are shooting at you, but if you actually need to march from point A to point B, which infantry do a lot of, then you need to adjust it.

On average, a person can do a sustained march at a speed in kilometers per hour equal to a quarter of their Rote running speed, plus 1 kph.

When hiking, a character will have to spend 1 Body after a number of hours equal to their Hike score, and 1 Body each hour after that if they keep hiking. Characters get back 1 Body lost to hiking after 1 hour of rest, 2 Body after 3 hours and 3 Body after 8 hours, but this assumes enough food and water. You can keep up a good hiking pace for as long as you have ration bars and water and a decent amount of sleep each night.

EXAMPLE

Example: Auitzotl has six marks in Hike (Rote score of 7) and is weighed down to a –50% run penalty, for a running speed (from the previous example) of 7 meters. If he has to march in this level of gear, he uses a quarter of his running speed, plus 1kph.

So, at this level of encumbrance, Auitzotl can march at a speed of 3 kilometers per hour, and he can do this for up to 7 hours before he loses 1 Body from exertion. His excellent Hike score doesn't let him walk any faster, but it does let him keep up a sustained pace far longer than less fit troopers.

An average soldier with a Rote Run of 2, a Rote Hike of 3 and an encumbrance penalty of –25% can make about 4 kph and will be able to march about 9 hours for a Body cost of 7, covering 36 kilometers (50 kilometers if unencumbered). This is the pace required to be in the infantry (heavy or light). That is, if you're in the infantry, your character and supporting characters should be able to walk 36km at 25% encumbrance before passing out. *At a minimum.*

Characters without leadership will seldom march past the point where they suffer Body from exertion.

Sprinting

Normal combat running movement assumes you are using cover and not making yourself obvious. Anyone can double their normal movement rate. All concealment or Cover is reduced by 25%, and sprinting costs 1 Body (not Morale) per turn. If there is no Cover where you are, then you should either hunker down and Hide (for a free extra 25%) or you should run as fast as you can to where there *is* Cover!

BUILD & REPAIR

BUILD & REPAIR

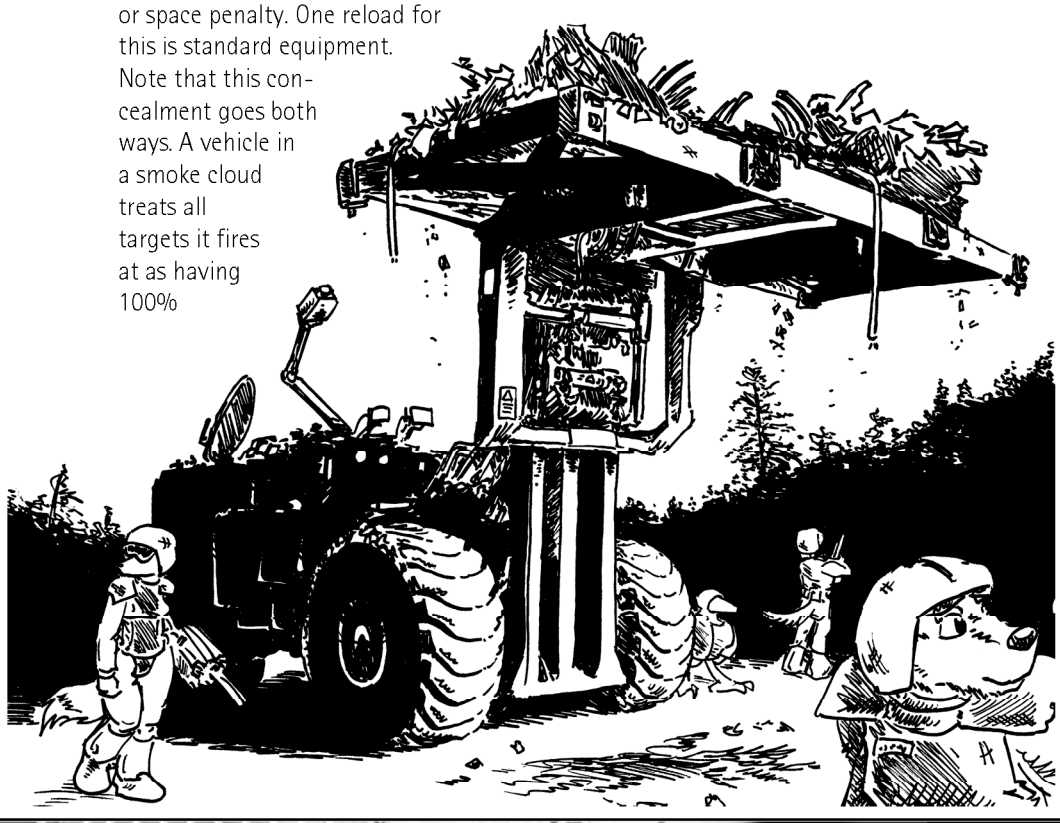
Albedo is not a bookkeeping system. Equipment breaks, and is shot at and blown up, but players should never have to keep track of incremental effects on individual items. Even vehicles, which can be huge and extremely complex, will have fewer stats than a character. The rules provided here for making and breaking equipment, including vehicles, are meant to be easy to use and, where possible, to use rules and ideas already known.

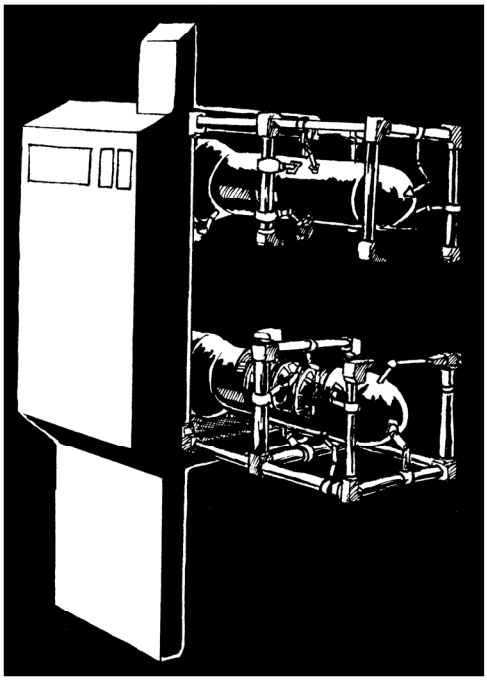
Building Vehicles

The array of vehicles characters are likely to interact with is fairly small, so we can make a system for creating them equally concise.

Standard equipment: All military ground vehicles are assumed to come with the following:

- Obscurement grenades to provide 100% concealment for six turns (stationary) or one turn (moving) are standard equipment and have no cost or space penalty. One reload for this is standard equipment. Note that this concealment goes both ways. A vehicle in a smoke cloud treats all targets it fires at as having 100% concealment as well. There is barely enough visibility to see where to drive at low speed. Punching into or out of a zero visibility condition at high speed takes a point of Morale or Drive.
- Communications equal to a squad leader's personal gear, though with a larger display.
- A sealed environment capable of keeping irritant agents out, and good air in. While *technically* this is proof against a 1 atmosphere differential (vacuum to 10 meter water depth), don't count on it being leak-free.
- Basic maintenance tools and critical spares, including those that might be needed to dig a vehicle out of a rough spot or repair a damaged wheel or track. This would be enough to repair 1 Body and 1 die shift done by a hit to the vehicle's mobility system.
- A winch capable of lifting the vehicle vertically, and 50 meters of cable.





T. External equipment tie-down points, power and data access. On a vacuum-capable ground vehicle, this includes life-support hookups.

Aerodynes have a fully sealed environment, radar, ladar and a mid-power comm suite. Internal cargo holds come with sufficient anchor points and tie-downs to hold the maximum rated load under the maximum allowed acceleration.

Power

There are two standard power plants available for most vehicles, *gas turbines* and *fusion reactors*. Fusion reactors are preferred if the vehicle is large enough to mount one, but they are also orders of magnitude more costly, which is part of the reason aerodynes are not seen when there is still heavy anti-aircraft capability on the ground. In the air, turbine thrust nozzles are the method of propulsion and most of maneuverability, and on the ground, wheels or tracks are used. The smallest possible fusion-powered turbo-thruster is rated at about 10,000 kilograms of thrust.

COMMAND REVIEW • ▶▽▯▯▯▯ ▯▯▯▯▽▶

Real-World Comparison

A late 20th-century turbine would have an output of about 1kW per kg. The ones presented here for *Albedo* are about 2kW per kg.

Given the size constraints mandated by the cargo area of assault aerodynes, the normal ground vehicle power plant is a three-shaft gas turbine with a mass of about 500 kilograms and an effective power output of around 1,000 kilowatts. Military units scavenge every possible bit of exhaust heat through devices like thermoelectric modules to generate more electrical power and spread out the vehicle's thermal signature. Downrated civilian versions have about half the output of military units, but much longer maintenance intervals, while older Homeguard units simply have slightly reduced performance. Larger vehicles on independent worlds often just use multiples of this power plant for higher output, and increased combat reliability through redundancy.

This turbine is backed up and augmented by a bank of batteries, which serve as an emergency power source, and also provide a quick acceleration boost while waiting for the turbine to wind up to higher speeds. A vehicle's fuel supply is normally enough for about five hours of high-intensity operations, or about forty hours of standby use, running the turbine to keep the batteries charged. Most EDF land vehicles have the potential to add extra fuel tankage. In land vehicles, this is usually in the form of an armor belt that also gives a minor amount of spaced armor protection, as well as quadrupling the fuel load. In aerodynes, their default endurance of 160 hours at full power is normally sufficient.

EDF troops are of two minds about extra fuel tankage. On the one hand, it gives an extra operational margin and provides extra protection. On the other hand, it slows the vehicle down measurably, and this protection is in the form of *turbine fuel*. Even if the extra mass stops a penetration, you do not want to be anywhere near the *outside* of the vehicle when this happens. While the extra fuel cells *are* explosion-proof, there is no way to keep a violently ruptured tank from spraying fuel all over the place.

ILR vehicles are generally not equipped with extra tankage. They rely on using the fuel supplies of whatever area they are occupying.

For both wheeled and tracked land vehicles, power is sent to independent and usually interchangeable wheel hubs or bogies, each with a separate electric motor. Power is distributed to the motors via computer control for optimum traction and maneuverability, though a hardwired default system can provide basic function in the event of computer malfunction.

Aerodynes are powered by small CAG fusion reactors (approximately 2 tons with ancillary equipment) with an output of several megawatts, though this term is largely useless to measure thrust in air vehicles. Aerodynes normally have sufficient fuel and consumables for 160 hours of high-intensity use, with several times this in standby capacity. Exoatmospheric aerodynes vent plasma from the reactor along with a small amount of reaction mass (to cool it down) for thrust and directional control in vacuum environments, and act like normal aerodynes in atmosphere.

You can use the following table to get a rough idea of a vehicle's performance. You normally count the maximum combat weight of a vehicle for determining its top speed. If you want, you can figure loaded and empty performance separately. You take the weight of the vehicle, apply any appropriate modifiers, and then use the result on that row for the top speed and Maneuver of the vehicle. Masses between table entries go to the next highest amount.

Weight	Top speed	Maneuver
.25 ton	≥ 1,225 kph	2d12 or 9
.375 ton	1050 kph	2d12 or 9
.5 ton	900 kph	2d12 or 9
.75 ton	750 kph	1d12 or 6
1 ton	600 kph	1d12 or 6
1.5 ton	500 kph	1d12 or 6
2 ton	400 kph	d12 or 6
3 ton	320 kph	d10 or 5
4 ton	250 kph	d10 or 5
6 ton	210 kph	d10 or 5
8 ton	180 kph	d10 or 5
12 ton	150 kph	d8 or 4
16 ton	120 kph	d8 or 4
25 ton	100 kph	d8 or 4
32 ton	80 kph	d8 or 4
50 ton	65 kph	d6 or 3
65 ton	50 kph	d6 or 3
90 ton	40 kph	d6 or 3
125 ton	35 kph	d6 or 3
180 ton	30 kph	d4 or 2
250 ton	25 kph	d4 or 2
375 ton	20 kph	d4 or 2
500 ton	15 kph	d4 or 2

Modifiers

Down rated turbine	go down 2 rows
Homeguard units	go down 1 row
Using 2 engines	go up 2 rows
Using 3 engines	go up 4 rows
Using 4 engines	go up 6 rows
Using 6 engines	go up 8 rows
Using 8 engines	go up 10 rows
CAG fusion reactor	go up 9 rows
Off-road vehicle*	go down 1 row
Tracked vehicle	go down 3 rows
ILR vehicle	go down 1 row
Exoatmospheric	go down 1 row

So, even if you have no idea about some unknown vehicle you've thrown at players on the spur of the moment, if it's a 30 ton tank with two turbines, you can say it has a speed for the 32 ton row, up 2 rows for the extra turbine, and down 3 rows for the tracks, giving it a top speed of about 65kph.

Aerodynes must have a *minimum* top speed of 500kph, and exoatmospheric models must be capable of at least 900kph in order to safely descend from and ascend to low orbit. An aerodyne that cannot reach 500kph in level flight because of combat damage does not have enough vectored thrust to make a safe *vertical* landing. If it cannot reach a speed of 320kph, it cannot maintain enough lift with its body to sustain level flight. An exoatmospheric *ground vehicle* is one that has the turbine replaced by fuel cells, and further environment sealing and air recyclers. The addition of an airlock to either type of vehicle takes up 3 passenger slots (as per "Loading a Vehicle", p. 237).

An off-road vehicle is faster on-road than a tracked vehicle, but loses 4 *extra* rows in cross-country conditions. A civilian vehicle not rated for off-road use will get bogged down, high centered or otherwise

stuck in short order and unusable on all but the most forgiving plains.

The "Maneuver" column is a measure of how hard the vehicle is to hit at its designed top speed and acceleration, and the stress placed on passengers in these conditions. Think of this number as the maximum the pilot can get out of the vehicle. If the pilot's skill roll is less than this amount, they use the lower of the two. For example, if you have a vehicle that is capable of d12 Maneuver and the pilot only has a d10 skill roll, they just aren't good enough or brave enough to push the vehicle to its limits, and would only get d10 for Maneuver.

The Size is the number of die shifts all rolls affected by the size of the vehicle will take. This includes the Maneuver rating. However, the Maneuver level is a *minimum* of d4 for any vehicle moving at least a quarter of its top speed. For now, all you need to do is remember the amount.

EXAMPLE

Example: We're going to do a running design of the most common vehicle characters will see, the APCL-8 (this is the EDF's 8-person armored personnel carrier with an 8mm remote machine-gun turret). It is a tracked vehicle with a loaded mass of 12 tons, and is powered by one turbine. Armed with that information, we see that it has a top speed of 80kph, and a Maneuver rating of d8(4), but its size as a vehicle will drop this to d6(3) in practical use because of the die shift from the size modifier.

So, we have:

APCL-8

Top speed: 80kph

Size: 1

Crew: 1+8 (1 crew, 8 passengers)

Maneuver: d8(4)

Armor

The standard armor material for both the EDF and ILR is a monomolecular composite that is grown by a standard electrochemical process that has been around since the beginning, though the discovery of the Creator ship shows that there *are* more advanced materials available. However, no one has managed to reverse engineer this poly-diamond material to come up with a method to manufacture it.

Armor can be grown in virtually any size or shape, though flat pieces are easier to work with than curved ones, and simple curves are easier than complex ones. A VLCC (Very Large Command Carrier) can manufacture pieces of virtually any size needed, but also carries pre-fab slabs that can simply be cut into the proper shape for replacement of planar parts, like the glacis of the aforementioned AV-4. The basic characteristics of armor include a relatively low heat capacity, moderate thermal conductivity, a fairly low density and transparency to radar. The way in which it is grown allows quite selective placement of inclusions, such that virtually all armor includes a non-metallic conductive grid to provide electrical shielding, both to minimize outside interference and to contain signal leakage generated by its own electronics.

Armor is normally glued together with adhesives similar in makeup to the armor itself, and once joined, pieces are effectively one contiguous piece. However, special RF melters can be run along a seam to reliquify the adhesive, allowing vehicles to broken down into their component parts as needed. This process requires field intensities that cannot be generated beyond a few centimeters, so there is no practical military application for the ungluing process. The same process is used for assembly and disassembly of civilian structural materials in most places.

The maximum size for an EDF land vehicle is that which will fit in a standard cargo slot (6 meters long by 3 meters wide by 3 meters high). For a vehicle of that size, you can get the following figures for how much heavy it is. *This figure is the fueled but otherwise empty weight (performance is based on the loaded weight).* Odds are that there will be at most a 1 ton difference for ground vehicles (the weight of the passengers), but cargo

COMMAND REVIEW • ▲▶◀◀▲▲ ◀▯▯▯◀▽

Drive Safely

Most civilian vehicles on ConFed worlds have a traffic management computer that is run by the Net. This provides hands-free driving in most urban areas. It also keep track of vehicle maintenance needs and can be used by law enforcement to immobilize the vehicle if needed..

aerodynes may have a significant fraction of their combat weight be cargo. To make it simple, weights round up to the next highest table entry. So, a vehicle with a loaded weight of 12 tons and an empty weight of 11 tons counts as a 12 ton vehicle for armor purposes. The table already takes into account the overhead caused by the engine and normal running gear that all vehicles have. Exoatmospheric aerodynes must have a Deflection of at least 7 to survive a controlled re-entry, which imposes serious mass penalties on large aerodynes. The front armor takes the brunt of the heat stress on re-entry, and if the standard armor distribution is used, a front Deflection of 7 is sufficient to handle the stress.

COMMAND REVIEW • ARMOR AND REFLEX

Armor Theory and Practice

The nature of the *Albedo* universe puts more stress on personal armor than vehicle armor. It is an infantry-heavy universe, and vehicles simply cannot mount armor sufficient to stop heavy weaponry, or even stop man-portable heavy weapons. There are few real tanks in the EDF — mostly APCs and indirect-fire emplacements. While many Homeguards have tanks, they are few and far between. *Albedo* armored vehicles are a platform that is proof against small arms, that can carry a big gun or a squad of infantry. Everything else is a matter of who gets off the first accurate shot.

As a result, armored vehicles cannot use brute force attacks and expect to survive. Unless your job is to hold a position, EDF and ILR armored vehicle doctrine is generally to use mobility to get the firepower where it can be employed to greatest advantage. Mobility, surprise and knowing when to cut & run are important parts of both EDF and ILR vehicle training.

Specialized Armor

One option that you may apply is a specialized armor bonus. This covers things like reactive armor, heat-dissipating construction for re-entry vehicles, or any other protection that only applies against a limited subset of damage types. You can drop the vehicle's Deflection by 1 overall, to get a +2 against a specific attack. For instance, if a vehicle had a normal Deflection of 7, it would become 6(8), where it had a 6 against normal attacks, and an 8 against a specific type of attack. This has no effect on vehicles that already have a Deflection of 16. Vehicles with a Deflection of 3 (effectively zero armor) may not gain this bonus. Conventional kinetic energy rounds are the default type of attack, and you *cannot* enhance the armor against that type of damage. You can use this rule to give aerodynes heat-resistant coatings to better allow them to handle re-entry stresses. Instead of having an overall Deflection of 6, you would in-

stead have a 5(7), where the higher number only applies against re-entry damage.

The maximum Deflection for a vehicle's inherent armor is 16 (starships are normally 18). Any armor that is heavier than this contributes to a higher Threshold for the vehicle noticing the effects of damage. If a vehicle *already* has a Deflection of 16, an Armored Vehicle Expert increases the vehicle's damage Threshold by 5 instead. However, if the Deflection is less than 16, the expert only increases it to 16.

As long as a vehicle has to interact with the outside world in terms of weapon ports, sensors, thrust nozzles, wheels or tracks, there will be spots where the armor can be penetrated, or at the very least, important subsystems can be damaged or destroyed. However, on a large enough vehicle, even penetrations can do absolutely nothing simply because of redundant systems and other inherent methods of damage compensation.

Sectional Armor

If you want or need to further specialize a vehicle, for each 2 points of total Deflection removed from a side or sides, you can upgrade one other side's Deflection by 1. For instance, if a vehicle had a Deflection of 7 (5 on sides, 3 on back), you could drop the right and left sides to a Deflection of 3, and upgrade the front to a Deflection of 9.

However, this means you actually have to write down the Deflection of *each* side rather than going with the default, so we don't recommend it.

Cockpit Armor

Most aerodynes are light in the armor department. To make up for this, they sometimes have armored cockpits and weapon stations, typically just armored seats and thick armor-glass for any windows. For +1 ton of weight, you can get +3 Deflection, which can be split among as many stations as desired, like +3 for the pilot, or +1 each for a pilot, observer and gunner. The extra armor only applies to hits that would affect these people. It does not protect equipment or the vehicle in general. Land vehicles generally do not have this option.

Empty Weight	Deflection	Threshold
1 ton	3	+0
1.5 tons	3	+0
2 tons	3	+0
3 tons	3	+0
4 tons	3	+0
5 tons	5	+0
6 tons	7	+0
7 tons	8	+0
8 tons	9	+0
10 tons	10	+0
12 tons	11	+0
16 tons	12	+0
20 tons	13	+0
25 tons	14	+0
32 tons	15	+0
50 tons	16	+0
65 tons	16	+5
90 tons	16	+5
125 tons	16	+10
180 tons	16	+10
250 tons	16	+15
375 tons	16	+15
500 tons	16	+20

Modifier	Change
1 cargo slot size	zero modifier
5/6 cargo slot size	go down 1 row
2/3 cargo slot size	go down 2 rows
1/2 cargo slot size	go down 3 rows
1/3 cargo slot size	go down 4 rows
Upgraded civ. veh.	go up 2 rows
ILR vehicle	go up 1 row
Heavy$_1$ turret	no row change
Heavy$_2$ turret	go up 1 row
Heavy$_3$ turret	go up 2 rows
Class 0 aerodyne	go up 1 row
Class 1 aerodyne	go up 2 rows
Class 2 aerodyne	go up 4 rows
Class 4 aerodyne	go up 6 rows
Class 8 aerodyne	go up 8 rows

Turrets

The Heavy designations refer to the size of the weapon that is mounted. If a vehicle has the space to fit multiple turrets, there is only a 1 row additional armor penalty past that for the *largest* turret on the vehicle. So, an aerodyne gunship with four Heavy$_2$ turrets only suffers a 2 row armor penalty.

Of course, it still has to have the interior space for these weapons (see "Loading a Vehicle", p 237).

Aerodynes

The class of an aerodyne refers to the size of its cargo area, and is the number of standard 6 x 3 x 3 meter cargo units that the aerodyne can manage in addition to the weight of its armor and airframe. The loaded weight cannot exceed an amount that would reduce performance below 500kph. Most aerodynes past class 0 will lose some of this cargo space because they will need to mount multiple engines. For instance, the D-12 lander is a class 4 aerodyne, but only has a cargo capacity of 2 units.

Class 0 through Class 4 aerodynes are a Size of 2, Class 8 through Class 32 are Size 3, and anything larger is likely Size 4. Remember that the Size is a die shift for any action affected by the physical size or ungainliness of the vehicle. So, even though a large orbital cargo lander has a base Maneuver of 2d12, by the time you take the die shift for its size into account, it is only going to have a maneuver die of d6.

Assault Boats

Watercraft are not a big part of the *Albedo* universe, but both the EDF and ILR have amphibious vehicles, and water engagements occasionally take place. Ground vehicles will float well enough to be amphibious if they weigh 18 tons or less per cargo unit of space. Vehicles up to 24 tons per cargo space can be made amphibious with preparation. Both would have top speed reduced by 8 rows from its ground speed on the maneuver chart, with a maximum water speed of no more than 25kph. A boat is designed solely as a water vehicle. It will have a loaded mass of no more than 6 tons per cargo space (12 tons plus (class number x 6) for larger ships), and has a top speed based on size and power with a 4 row speed reduction. The EDF does not have any watercraft larger than one standard cargo volume, though planets will of course have large vessels for shipping, fishing or passenger use. These can carry larger loads than "combat" vessels, but are correspondingly slower.

Loading a Vehicle

None of this really tells you what you can put *in* a vehicle. Size and mass are a general indication of armor, but this is only accurate for a vehicle that has no other features.

A one-cargo-slot vehicle can carry a driver and eighteen passengers with some degree of maneuvering room. Two infantry with gear count as three passengers. One dedicated gunner (with minimal gear and pistol) counts as one passenger. ILR infantry and crew only take one slot each. You *can* cram more people in a ground vehicle if you don't mind stowing gear on the outside (and risk having it all blown off or blown up), or having no room to maneuver or use firing ports. In particular, EDF infantry and kit can be crammed into transport aerodynes at the density of two squads per cargo slot, with enough room left over for a crate of support weapons.

Vehicle weapons are either $Heavy_1$, $Heavy_2$, or $Heavy_3$. A remote 6mm or 8mm machinegun with 960 rounds of ammunition (weapon load plus one reload) is a typical $Heavy_1$ weapon. A twin machinegun remote turret and 480 rounds of ammunition is also a $Heavy_1$ weapon. If you don't even have a $Heavy_1$ weapon, you get a passenger slot back. A second $Heavy_1$ is 1 slot. A light cannon turret, heavy machinegun or autofire grenade launcher and a total of two belts of ammunition is a typical $Heavy_2$ weapon, as is a single heavy missile or a small rocket pod. $Heavy_2$ weapons take up 3 passenger slots. *Any* turret that is manned rather than remote is at least $Heavy_2$. A large autocannon with a total of two belts of ammunition, a regular cannon or heavy mortar with 40 rounds, or a rotary heavy missile launcher (no reloads) is a typical $Heavy_3$ weapon. $Heavy_3$ weapons take up 5 passenger slots. $Heavy_1$ weapons can be operated by the driver or any crew or passenger if necessary. $Heavy_2$ and $Heavy_3$, weapons require one dedicated crew, and operate at best efficiency with one observer and one gunner. On aerodynes, groups of similar weapons can be slaved through a fire control computer and only one gunner (and observer) is required per group of weapons.

Extra ammunition equal to what came with the slot, should you need it, takes up 1 slot for $Heavy_1$, 2 slots for $Heavy_2$, and 3 slots for a $Heavy_3$ weapon. This can be prorated if you do not have space for a full set of reloads.

Item	Space
1 Cargo volume	18 slots
2 infantry & gear	3 slots
2 passengers (gear outside)	2 slots
$Heavy_1$ weapon	0/1 slots
Extra ammo	1 slot
$Heavy_2$ weapon	3 slots
Extra ammo	2 slots
$Heavy_3$ weapon	5 slots
Extra ammo	3 slots

EXAMPLE

Example: Using our APCL-8 as an example, it has an empty mass on the "12 ton" row. It takes up 2/3 of a cargo slot and no other row modifiers, which gives it a final Deflection of 13. Using the default, we know that this is the front Deflection. The side Deflection is 11, and all other Deflections are 9.

Its size of 2/3 a cargo slot drops its capacity to 12 plus driver. If we put in 8 infantry and the free 8mm remote turret, that fills the vehicle up exactly. If we did a variant with a light cannon turret, we would lose 3 of our 12 slots to the weapon, and 3 more for the two crew (commander and gunner), leaving 6 slots, enough for a four person fire team.

So, we have:

APCL-8

Top speed: 80kph

Amphibious: yes

Size: 1

Crew: 1+8

Maneuver: d8(4)

Armament: 8mm remote MG turret

Deflection: 13

Aside from determining the Body of the vehicle, we're done!

Additional Equipment

This works out fine for weaponed vehicles that have only one engine. But there are other potential space fillers, especially for non-combat or high-performance vehicles.

As a reminder, ILR forces are on the whole, physically smaller than EDF forces. Fully equipped ILR infantry or vehicle crew only take 1 passenger slot. The ILR is also more partial to wheeled vehicles, for lower maintenance costs and higher road speed, at the cost of reduced cross-country performance compared to tracked EDF vehicles.

Other running gear or ancillary equipment in a vehicle will not affect its armor but will occupy potential passenger slots.

Item	Space
Each extra gas turbine	4 slots
Each extra fusion reactor	9 slots
Mid-power comm suite	3 slots
High-power comm suite	12 slots
Med couch	3 slots
Med table	6 slots
Sanitary system	2 slots
Air recycler	1 slot
Airlock	2 slots
Machine shop	15 slots
Console	1 slot
Fold-out bunk	1 slot
Tactical display	2 slots
Storage locker	1 slot
Kitchen	12 slots
Freight container	12 slots

A mid-power communication suite takes up 3 slots, and can maintain communication with squad leaders over several kilometers, even in a heavy EW environment. This comes with one console to use it, though several consoles can access the equipment simultaneously.

A high-power communication suite takes up 12 slots, and can punch signals through to orbiting ships, even in a heavy EW environment. This comes with one console to use it, though several consoles can access the equipment simultaneously.

A med couch takes up 3 slots, and with a med tech can handle basic wound management and stabilization.

A med table takes up 6 slots, and with two med techs can handle most battlefield surgery and emergency procedures.

A portable sanitary system takes up 2 slots and consists of a small sink and pan-species toilet. Don't expect a lot of privacy.

An air recycler takes 1 slot per 12 people supported. Aerodynes are assumed to have this, but ground vehicles do not. This provides breathable air for as long as the vehicle's power holds out, and may be augmented by a small solar array somewhere on the vehicle.

A one-being airlock takes up 2 slots, and takes a minimum of 2 turns to use, more if you want to conserve air in the vehicle. Aerodynes are *not* assumed to have this (all aerodynes are sealed environment, but not all are exoatmospheric).

A machine shop takes 15 slots. It adds 1 Quality-hour per person using it for a repair or fabrication task, with a maximum of 3 people gaining the benefit.

Fold-out bunks take 1 slot each. They give a person a protected place to get some sleep and store their gear. A crew or passenger plus a bunk will take up 2 slots.

A console takes up 1 slot, and requires 1 person to use it. Any skill that requires coordination and compiling of information is going to require a console.

A tactical display takes up 2 slots, and is simply a touch-sensitive holographic display panel, set in either a horizontal or vertical orientation. These are most often seen in command vehicles, and can usually be dismounted and set up outside the vehicle for pre-mission briefings.

A storage locker takes up 1 slot and holds the equivalent of three 72-hour kits, or eight rifles with three magazines each, or six light rockets or support weapons.

A kitchen takes 12 slots. With one or two cooks it can provide hot pan-species meals for up to a company, using a storage locker's worth of food per company-meal.

A freight container takes 12 slots, and holds 12 slots of other equipment. It is a Deflection 3 box that is 2/3 of a standard cargo volume. The ALP variant of the AV-4 is designed to carry one of these. These are the EDF equivalent of cargo trucks, and the ALP is always found with elastomer tracks to avoid damaging paved surfaces.

Vehicle Body

A vehicle's Body will be based on its *empty* weight, which gives a passable approximation of how much there material is there to suck up damage. Vehicles have a Body of 4 for a 1 ton vehicle, and +4 Body every time you double this (about +1 for a 25% increase).

Vehicle weight	Body
1 ton	4
1.5 ton	6
2 tons	8
3 tons	10
4 tons	12
6 tons	14
8 tons	16
12 tons	18
16 tons	20
25 tons	22
35 tons	24
50 tons	26
65 tons	28
90 tons	30
130 tons	32
175 tons	34
250 tons	36
375 tons	38
500 tons	40

EXAMPLE

Example: So, a basic APCL-8 with a mass of 12 tons will have 18 Body (4 for 1 ton, then +4 more at 2, 4 and 8 tons, +2 more for a 50% increase past 8 tons). This gives it a minimum damage threshold of 36. This is completely outside the range of what small arms can do short of a Critical Hit (even if they could penetrate the armor), but well within the range of weapons such as heavy machine guns and light cannon.

Aerodyne Design

Aerodynes are designed exactly the same way, except you use a fusion reactor instead of a turbine. Note that even though you could conceivably fit a fusion powered vehicle into a standard cargo slot (though not by much), the cost of the reactor alone would be more than everything else in the vehicle put together, so they simply are not used on ground vehicles. An aerodyne *can* be powered by multiple fusion plants, and this may be required for exoatmospheric models. For purposes of armor and Body, you use the empty aerodyne weight. For

purposes of performance, you use the loaded weight, which will of course vary with what you have in the cargo slots.

The "class" of an aerodyne is simply for design purposes and represents the number of standard cargo slots it can hold. The Class 0 aerodyne is the smallest, and can carry a fire team and all their supplies, or up to 2 tons of cargo. It has for all practical purposes half a cargo slot, split lengthwise. There are cargo aerodynes up to 5,000 tons in total weight, but characters are never going to see one outside an extremely safe rear area. However, with some modification. the rules *can* stretch that far...

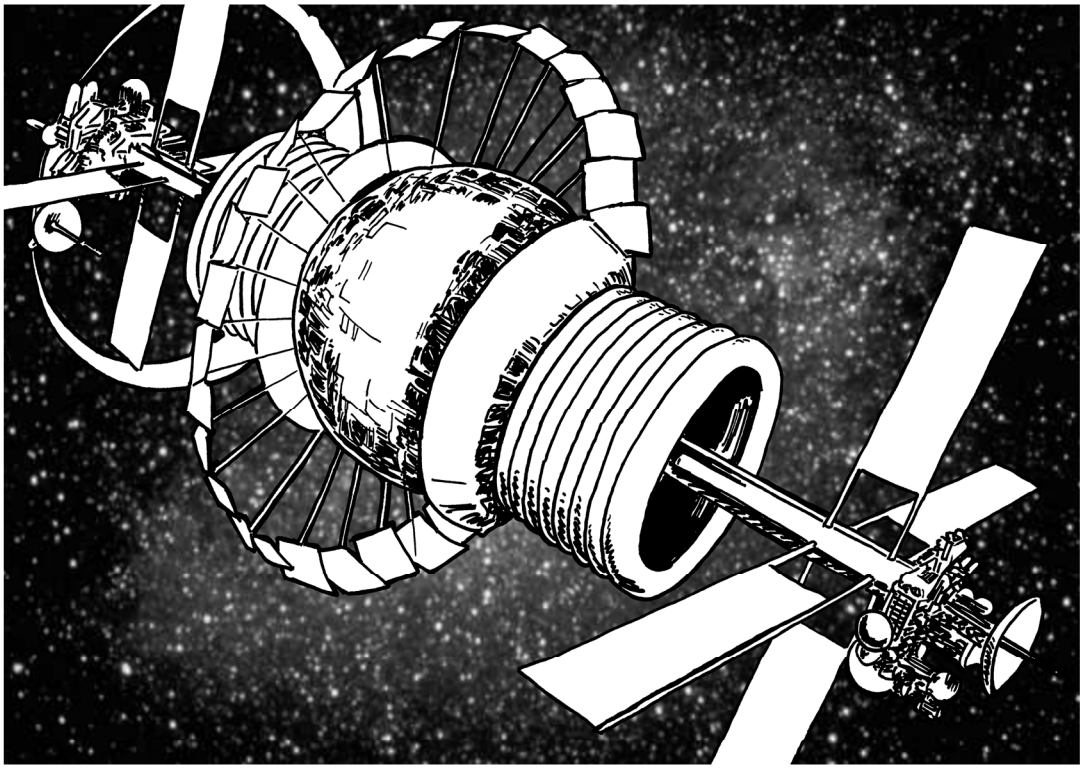
Civilian helicopters and other light craft are built like aerodynes, but use gas turbines for power instead of fusion reactors. Helicopters have more "bite" in the air than aerodynes and get a Maneuver that is one die type higher than their actual top speed would indicate.

As an optional rule for long-distance travel, craft that can operate at high altitudes can go up 2 extra rows for determining their top speed in thinner atmospheres.

EXAMPLE

Example: The Aero C-3 is the smallest cargo aerodyne in service (a class 0), used for training and Homeguard purposes. It has an empty mass of about 8 tons and a loaded mass of about 10 tons. We look at the mass and the power plant table and see that it has a top speed (empty) of about 750kph (CAG fusion reactor, Homeguard unit, and we have to round the mass up to 12 tons). This gives it a Maneuver of 1d12(6), though we can note that it would be 2d12(9) if the cargo hold were empty. We look at the armor table for an *empty* mass of 8 tons and a class 0 aerodyne and see that it has a Deflection of 8, and the Body table to see that is has 16 Body. In a cargo configuration, the C-3 is unarmed, so we can get back a little space, but otherwise that's all we need to know.

Aero C-3
Top speed: 750kph(900kph empty)
Size: 1
Maneuver: d12(6)
Armament: none
Deflection: 8
Body: 16
Damage Thresholds: 32/42/52/72



Aerodyne Designations

Aerodynes in Albedo are designed according to their cargo volume (class 1, class 2, etc), but are *named* according to their cargo volume dimensions.

Field Modifications

Crews are always doing things to their vehicles, as least within the limits that higher-ups allow. This could be anything from nose art on a bomber to field-expedient armor upgrades. Sandbagging is an example. Remember that any field expedient changes you make can affect performance. If you drop a few tons of sand, spaced armor or extra fuel tankage on an ACV-4, you might be able to increase its Deflection by +1 and its Body by +1, but its top speed is going to be significantly slower, and you've certainly compromised its amphibious and soft terrain capability.

Field modifications to armor simply use half the weight added to adjust the overall armor value and Body, or the full weight added to adjust any three facings, or "weapons" or "passengers". Ground vehicles can add this improvised armor externally, while air vehicles would have to do it internally and in most cases how you can do it is very limited.

EXAMPLE

Example: Our ACPL-8 design had an empty weight of 12 tons. If we sandbagged this vehicle for 4 more tons of armor, we could get and +1 Body and +1 Deflection on three facings, probably the front and sides, or, we could just say that hits that would be to passengers or driver get the extra +1 Deflection. This extra 4 tons of weight is going to drop our top speed from 80kph to 65kph, which also drops our Maneuver die from d8 to d6.

If a vehicle gains extra Body from improvised improvements, then the first Body lost from damage is generally to these improvements and not to the actual vehicle. A Wound to our sandbagged ACPL-8 would do 1 Body, but we would say this first point of damage is to the sandbags. This means that the actual vehicle needs less repairs.

Other modifications can be useful without affecting performance. Most APCL-8s are being upgraded with vision and firing ports in the roof hatches. While no one expects the occupants to shoot at targets above them, the hatches are already used for partial cover when open, and this increases their effectiveness to 75%. The only downside is that reduced visibility through the firing port increases the effective concealment of anything fired at by 25%.

Characters who have an idea, a vehicle to work on, and a superior who is willing to endorse it (or at least look the other way) can make minor modifications to a vehicle. This uses Design skill. If you do not have Design skill, you cannot improvise or improve your vehicle. Convincing a superior to allow it is a role-playing issue, but can usually be handled with Persuade. The actual difficulty of the modification is up to the Game Host. Supporting characters will not modify equipment without the guidance and implicit permission of their immediate superior (usually 1 Morale). In addition to any limits imposed on performance, it will take an amount of time like repairing 1 Body of vehicle damage. This will be some combination of Scrounge, Repair and possibly Bureaucracy tasks to pull off, the difficulty depending on the exact situation.

Repairs

While most planetary operations are relatively short in duration, military gear, especially vehicles, often runs at the edge of the performance envelope and requires a high amount of maintenance to stay in good operating condition. Infantry hardware is generally an exception. That gear is meant to be abused, and can usually withstand seriously hostile conditions for quite some time with only moderate care.

For all practical purposes, any military vehicle is due for a routine maintenance cycle after *every* combat. All military vehicles should have at least a cursory inspection done each day or after each sortie, just to see if any problems are about to crop up.

Cursory Maintenance

Routine checks of fluid levels, pressure readings, and electronics diagnosis are the sorts of things that ground vehicle crews do once a day, and flight mechanics do between routine flights. It takes 1 Quality-hour for a one ton vehicle, and +1 hour each time you double it, rounding to the nearest multiple.

Aerodynes take 50% longer, wheeled vehicles take 50% less, and civilian vehicles take 50% less. *Yes, wheeled civilian vehicles require no maintenance per day.* If you want to do this level of detail, a soldier's personal weapons and gear require 1 Quality-hour of maintenance per week of normal duty, or per day that has a firefight in it.

EXAMPLE

Example: On an independent planet that has a 32 ton tracked vehicle, the crew needs to spend 6 Quality-hours per day of use just keeping the tracks tensioned, doing turbine diagnostics, cleaning the air filters, and doing other routine tasks. If the crew has two people with Repair Rotes of 2 and two with Rotes of 1, that means the entire crew working together spends an hour working on it. If this were an aerodyne, it would take 9 Quality-hours per day (1.5 hours for that crew), and if it were a military wheeled vehicle it would only take 3 Quality-hours per day (half an hour for that crew).

Routine Maintenance

A vehicle should receive routine maintenance after any combat situation, or any situation extraordinary enough to warrant use of the vehicle's full Maneuver rating. Stressed airframes and turbines, EW-attacked electronics, and damaged armor all need attention. Routine maintenance works much like cursory maintenance, but is 2 Quality-hours for a 1 ton vehicle, and +2 hours each time you double it, rounding to the nearest multiple. Aerodynes take 50% longer, and wheeled vehicles take 50% less. Civilian vehicles in normal use need routine maintenance twice a year.

Damage Control

If a vehicle has actually suffered Wound effects of lost Body, it is time to break out the spare parts or call the nearest depot drop-ship. To make it simple, it is 3 Quality-hours for a 1 ton vehicle, and +3 hours each time you double it, rounding to the nearest multiple. This time has to be spent *per* Body the vehicle has taken. Aerodynes take 50% longer, and wheeled vehicles take 50% less. Die shift marks are removed proportional to the Body repaired, and you can choose which systems are repaired first.

EXAMPLE

Example: Look at the AV-4 from the damage example on page 205. It is a 12-ton vehicle that has lost 5 Body and suffered 3 die shift penalties. We need 15 Quality-hours per Body to repair the damage (the 12 ton mass rounds to 16 tons), so this vehicle will take 75 Quality-hours to get back into shape, provided the parts and tools are available. Since there are 3 die shift penalties, we can erase 1 of them each time 2 Body are repaired.

It is possible a vehicle can have die shift penalties without having lost any Body. In this case, count the necessary repairs as taking the time to repair 1 Body of damage. A vehicle can also have all its die shift marks repaired and still have unrepaired Body damage. Despite visible damage, the vehicle is completely serviceable.

It is up to the Game Host to set practical limits on how many people can contribute to a particular repair, both for the size of the item being repaired and the tools available to make the repairs.

Spare Parts

Repairs go faster if you've got everything you need. If you have to, you can yank out a turbine spindle and individually replace shredded impellers, or you can just pull the whole turbine and plug in a new one. If you've got the spare parts to waste, like a donor vehicle, you can pull entire compatible assemblies and replace them as a unit, rather than just fixing the actual broken bits. If a vehicle has lost more than 3 Body, this is an option, and speeds the repair. Each 3 Body repaired only takes the time of 2 Body, but at the cost of double the material. Since the EDF is fairly stingy in this regard, and EDF personnel are assumed to have unlimited time for their duties, this procedure is normally limited to emergency situations, where time is more important than expense.

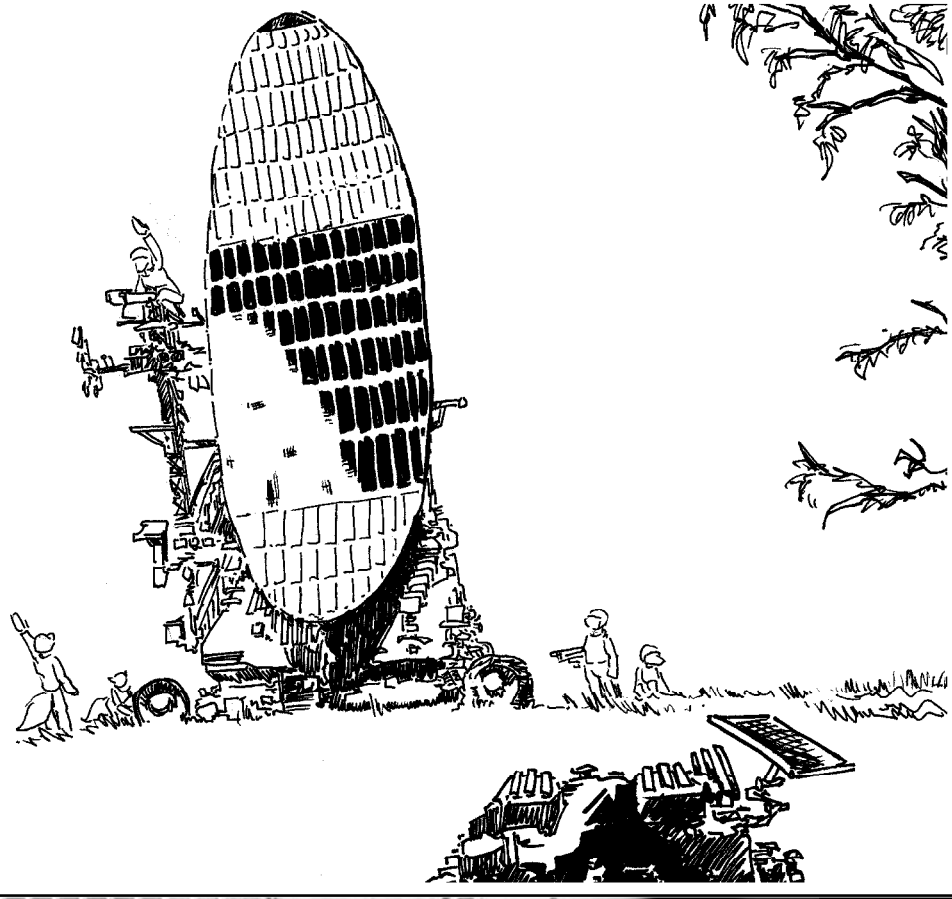
Commanders also have the option of declaring a damaged vehicle as "scrap", which makes it instantly eligible as a donor vehicle for parts. A good repair tech will use absolutely everything on a scrap vehicle, and when it comes time to pack up and go home there won't be anything left but a greasy spot on the ground.

Environmental modifiers: These numbers assume an environment that applies *normal* wear & tear to a vehicle. Harsh conditions (sand, volcanic dust, monsoon rains) will turn cursory maintenance into routine maintenance, and routine maintenance into damage control as though the vehicle took 1 Body. Hostile environments are especially tough on a deployment. Units go through spare parts and maintenance stores at double the normal rate, vehicles that re-supply these stocks need double the maintenance, and orbital facilities like VLCCs that manufacture spares and supplies are working twice as hard. Even with good advance planning, there may be localized parts shortages that make proper maintenance impossible, forcing some mechanized or aerodyne units to operate at less than full capacity. Local commanders complain, and scroungers scrounge, but if the parts aren't there, they aren't there.

Inadequate Maintenance

If a vehicle (or any other piece of significant hardware) has not had the required maintenance for its level of use, there is a chance it will suffer a malfunction of some kind the next time it is used. The next time a system is used on a die roll and *any* die rolls "1", that system suffers a die shift penalty of 1 and the vehicle takes 1 Body. Characters who are using Rote are babying the vehicle and it will not have any problems for a number of missed maintenance cycles equal to the Rote Score in question. This penalty on the vehicle can happen only once per missed maintenance cycle, but it can happen several times in the same maintenance cycle if it managed to avoid problems in previous ones. Covering for inadequate maintenance involves the same time as Damage Control to repair the lost Body.

It is *always* cheaper in time and parts to do preventive maintenance than catch-up maintenance, and a good commander will make sure techs stay on top of things before minor problems have a chance to become major ones.



NEW GEAR
NU GEN

In addition to some fairly plebian items missing from the gear available in the basic game, the universe of *Albedo* is a universe at war. In war, things change. If your armor isn't strong enough, you make it stronger. If your weapons are not powerful enough, you upgrade them. If your tactics don't work, you modify them. Even the intellectually conservative inhabitants of the ConFed and ILR are not immune to the pressures that force technological evolution.

Some of the gear that follows is brand new, and will be encountered for the first time sometime later in your campaign, while other gear simply provides needed stats for things you've already encountered and probably taken for granted.

The EDF has some unique items that may give it an edge, and the ILR has a few to make life difficult for EDF characters. Items will be listed as EDF, ILR or Independent, which gives you a fair idea of where they will be found. Many Independent items like pistols are also likely to be found among civil populations on ConFed worlds.

Hunting and Gathering

EDF troops are issued very specific gear. And its not their gear, it's the EDF's, and so they can't necessarily hang onto it between assignments. This is where good leaders and scroungers come into play. A character can normally make only one official request for an item outside the normal allotments for a mission or the standard equipment for their unit type. If the request fails, you normally can't make another for that particular item until you are reassigned or your immediate superior is reassigned, or your unit is redeployed.

I. *Persuade* ("Ah, c'mon, we're buddies, right? I really need that grenade launcher..."),
II. *Bribery* ("I'll give you these heated gloves for that grenade launcher"),
III. *Bureaucratics* ("Subsection 3.2 of the Unit Allocations text states that an officer is entitled to the weapon of his (or her) choice. Well, I want a grenade launcher."), or
IV. *Scrounge* ("Did you know a J32-A6 plasma duct has 6 manifolds, and each one has an inside diameter of exactly 32mm?...")

To acquire extra equipment, and the difficulty depends on how far outside your normal operational specs the gear is. A Botch with Bribery or Scrounging results in 1 Oversight (you got caught doing something you shouldn't have been doing). Having something useful to negotiate with will usually drop the difficulty by 1, and a grade of rank beyond O6 or S3 might also be of use with certain skills.

To have another unit or division modify existing equipment for more efficiency is a difficulty of 1. Anyone can do this, you just have to ask nicely. "Hey, it's freezing out here! We need some winter boots!". The EDF has a lot of combat experience to draw on and units will generally be equipped with the right gear and weapons for their mission, though perhaps not in the quantity desired by the individual squads.

To actually modify existing equipment in a visibly non-standard way is a difficulty of 2 or 3. This is something like having extended magazines made for your weapons, or altering a multi-species weapon grip that really doesn't take your *particular* anatomy into account all that well.

To get a hold of extra gear that is technically allowed for your unit but was not actually issued is a difficulty of 4. This is something like scrounging up an under-barrel grenade launchers for an assault rifle, or somehow acquiring a shotgun or two.

Something that is issued at a company level (for *your* company), but not to your particular squad, would be a difficulty of 6. This might be something like a pack robot or a couple PLRX rocket launchers.

Something that exists at battalion level but which your company or unit has no business using is a difficulty of 8. Acquiring possession is usually part of an adventure in itself, and *then* you have to use some skill to hang into it for any length of time. "Look, it's an armored personnel carrier! It followed us home, can we keep it?"

Simply getting or hanging onto extra consumables like clips or grenades or ration bars is a difficulty of 2 for 1 item, and +1 each time you double the number of items hoarded or otherwise acquired. A day's worth of ration bars or other non-combat consumables is one item.

Once you have your mitts on an item, you can usually hang onto it until your unit is redeployed. Any time you have to pack up your gear or inventory your weapons, you usually have to make a skill check to keep any non-standard kit, and anything that is really out of bounds is going to disappear or have to be somehow integrated back into the normal scheme of things. "Forgetting" to list an item in your squad's inventory is just asking for Oversight, and even if you are willing to risk it, the superior you got permission from is unlikely to, and will not-so-gently remind you about any "incomplete" paperwork you need to finish up before Admin bean-counters start looking for discrepancies.

There are all kinds of forms and official excuses to cover for the temporary redistribution of combat assets outside the normal channels, but it is important that the numbers add up at the end of the day and that it is all accounted for. Anything that is "missing" tends to look a lot like smuggling or theft, and that brings in Special Services, which no one really wants.

So, even if your light infantry manages to somehow get and keep an APC, you're never going to get it off-planet and keep it for your next assignment. You'll have trouble enough simply keeping it if you are transferred to a different city. The best thing to do might be to trade it for a case of grenades and let it be someone else's toy for a while...

EXAMPLE

Example 1: Lt. Bayloo has two marks in Persuade, and is also an O7. If, after a particular action, she wants to hang on to some munitions and ratpacks (4 extra clips, 2 grenades, and 2 days with of ratpacks), this is 8 items. Eight items has a difficulty of 5 (base of 2, +3 for three doublings). She can drop this to a 4 because she is an O7, and she has a skill roll of 1d6 unless she Pushes or Risks it. If she rolls a 5 or 6, she informally mentions it to her platoon leader and he gives her a nod, because he did the same thing himself as a squad leader. On a roll of 1 to 4, she makes the request at a bad time or otherwise blows it, getting a stern look from the platoon leader that she knows means "no hoarding today".

EXAMPLE

Example 2: Lt. Bayloo wants to have her squad weapons modified to be more avian-friendly. In this case, she is on solid ground. It might normally be a difficulty of 3, but she has a Rote of 3, and her rank might drop the difficulty to 2, plus the fact that her entire squad is avian means there will be no compatibility problems if the weapons are slightly altered.

Note that supporting characters (especially Supporting Officer Characters) can hoard and modify too if they have the skills (and *everybody* has a Mark in Bribe and Persuade!). Most soldiers get really good at asking Supply for things they could conceivably need that might under the right circumstances be issued but they have not gotten yet. These items are usually Trivial to acquire (such as more hygiene supplies, a new knife, or a new blanket) but they can be hoarded and traded for ration bars, ammunition, and the like. After all, if you are going to Bribe someone, you need something to Bribe with! On the other hand, everything easily acquired from supply is already in circulation, making it a low-value currency for trading.

War Trophies

While things like captured vehicles are usually demolished or turned over to local governments for internal use, captured enemy weapons and gear may be kept and shipped home as war trophies. Weapons are demilled (made permanently inoperative), usually by drilling holes in inconspicuous but critical components, and removal of any explosive compounds. Electronics of a non-sensitive nature are usually left intact. It is usually a difficulty of 3 or 4 to get the time and permission to have a war trophy logged and demilled and put in the normal transport queue to be shipped home, which is done as low-priority military cargo.

Utility Items

There are many items that are neither weapons nor vehicles that characters will find important..

Fiber Spool (EDF)

A 1 kilometer spool of abrasion-resistant fiber-optic thread weighs about 10 kilograms. It can be used to set up secure and unjammable communications or data links between two points. It can be spliced into longer lengths with signal repeaters, and multiple stations can tap into the same fiber. It is not very durable — someone tripping over it will snap it — but it is better than nothing and will work through most weather and temperature extremes. It is the same fiber used for passing commands between computerized subsystems on a vehicle, so repair crews typically have several partially used spools of the stuff lying around.

Infuser Pump (EDF)

This is a tiny, computer controlled micropump with a reservoir for pain-killing drugs. A med tech can place a tiny injection needle on the nerve pathways that lead to a specific injury site to deaden the pain in just that spot without having to drug the entire patient. This is a tiny device that only weighs about a tenth of a kilogram and takes up negligible space in a medical kit.

This device does not prevent or reverse any loss of Body, but it does reduce the continuing assault of pain on the nervous system. A Crippled character can act as if merely Wounded. An Incapacitated character who has had their injuries stabilized (a separate medical task) can act as though they were only Crippled. An infuser pump will last for a week on one battery, but needs to be refilled with drugs anywhere from twice a day to once every few days, depending on the level of pain relief required.

EXAMPLE

Example: A person who has a wound (+1d20 on subsequent attacks), is counted as uninjured.

It requires a skilled med tech to properly apply the device, and it is not something that can be done without at least 2 marks in the skill. It takes a few minutes to do this

COMMAND REVIEW • ARMADA DISPATCH

Chemical Addiction

The neural pathways that lead to chemical addiction seem to have been engineered out of the species of *Albedo*, so no abuse of pain-killing drugs for "entertainment" purposes has been recorded.

properly, if only because armor must be partially removed to get at the appropriate area for the nerve block.

v2 Multi-Species Combat Rations (MCR) (EDF)

The standard EDF ration bars are universally loathed. The only soldiers who appear to like them are ILR POWs, which implies that their combat rations are even worse, a point which most EDF infantry argue is quite impossible.

The official designation of Multi-species Combat Ration (MCR) is occasionally referred to as Marginally Consumable Refuse. The v2 ration is designed to reduce (but probably not eliminate) complaints about the v1 ration.

The v2 rations are about double the size of the v1 bars, but add negligible weight. They come in a variety of flavors and dietary preferences, and also in different sizes for different species. They also have a self-heating pack for cold weather, a flavoring and purification tablet for water, and a variety of small dessert items. Aside from being size-specific, contents are randomized, encouraging troops to mix and trade with each other to get their personal preferences.

The v2 rations are still not very filling, though they do provide all the nutritional requirements of a soldier in the field.

Rescue Flare (EDF)

The normal flare is a standard pyrotechnic device that has one of several colors, each one denoting a particular situation. The standard red flare that is part of an EDF kit is "EDF person needs help!". The rescue flare is currently a prototype item issued as part of a 24 or 72 hour kit, substituting for the regular flares. Instead of a pyrotechnic light source, it uses an omni-directional laser emitter. Before firing, it interfaces with the user's hand computer or helmet to generate authentication codes unique to that individual. When it reaches its maximum height, it broadcasts a visual signal that can be recognized by any EDF electro-optic device, which can then pass the information on to the best people to act on it. This is the only way for a solider out of radio range to get a uniquely identifiable distress signal out to friendly forces. The flare goes into standby mode to receive signals when its sealed pouch is opened, and this requires negligible power. A soldier can simply issue a voice command to deactivate the flare, or put in a "duress" overlay on the signal, thus preventing the flare from being used to draw in EDF forces if the soldier is captured. Bandwidth of the signal is enough to send a short sentence's worth of repeating data, but otherwise it cannot be used as a long-range means of contact for units outside radio range.

Autonomous Combat Resupply Unit (EDF)

Also known as a "CRU" (everyone drops the "A"), this is a variant of the standard legged utility robot, which takes up about as much space as a normal infantry unit. The legs are slightly shorter and thicker, and it is much boxier. It can carry up to 60 kilograms of any type of supplies through any environment a person can walk in (it cannot climb or swim). With a range of about 10 kilometers under good conditions, it can be sent into harm's way to resupply units behind enemy lines. Typically, it is keyed to listen for a particular squad's authentication codes, and is paradropped into their immediate vicinity. It then uses its own on-board intelligence to find the best route to its destination, and if no one is there, it will use terrain mapping and known threats to make a guess about which direction to go next.

CRUs are expensive supply mules and have a very high casualty rate in any hot zone, so they are not frequently used. They would be battalion-level assets, used to support platoons that cannot be resupplied by any other means. A CRU is counted like a vehicle with a Deflection of 9 and 4 Body, and it has a top speed (seldom reached) of about 30 meters per turn.

Glue Gun (EDF)

This is a 40 kilogram wheeled unit the size of a large backpack, equipped with a 3 meter armored hose and shielded emitter nozzle. When hooked up to a high energy power source like a vehicle turbine, it can be used to weld or unweld monomolecular armor or structural materials by weakening the bonds between the adhesive material used to join panels. New material comes from a reservoir in the unit, while material vacuumed out in the unwelding process is

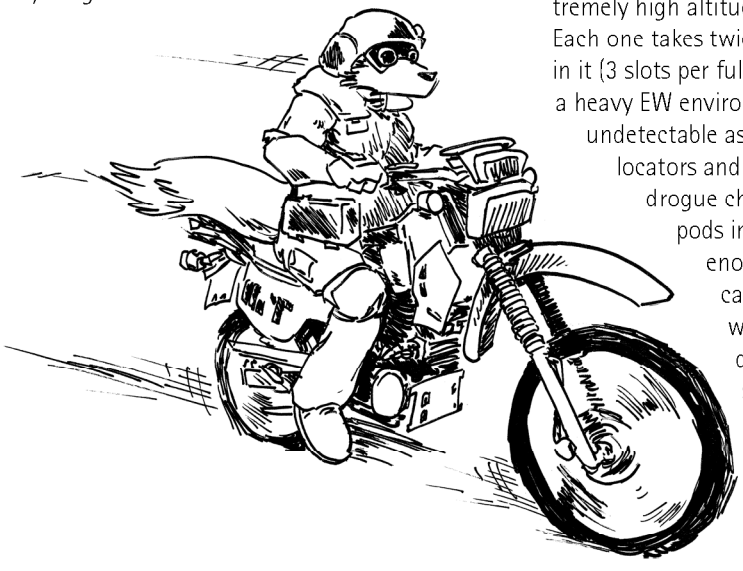
ejected in a heap beside the unit. Welds are for most purposes, as strong as the base material. Glue guns are ubiquitous with engineering units (and starship damage control units), and can be used to patch bullet holes, add tie-down points and even assemble or disassemble entire vehicles. One or more glue guns would be *required* tools for some build & repair tasks, along with any required amount of glue blocks to be dumped into the gun's hopper.

Folding Barracks (EDF)

This is a 1/2 cargo slot container (6 x 3 x 1.5) that unfolds into a complete barracks for a squad. This includes a solar recharging station and a small shower, sink and toilet facility. It takes 2 Quality-hours to set up the barracks, and 3 to fold it back up. Properly anchored, it can withstand up to hurricane-force winds. It is only marginally airtight, and previously used units (most of them) may have minor glitches. They are highly prized for any long-term deployment outside an urban area.

Camouflage Netting (EDF)

This is used mainly by stationary units such as headquarters or field hospitals. It has a standard 10 x 10 meter size and masses a lightweight 8 kilograms. It cannot negate the ability of high tech observation equipment to spot it, but it can disrupt the silhouettes of what is underneath it, making it difficult to identify specific targets. It provides a 25% concealment bonus to anything underneath it.



Camouflage, ghillie suits and color-adaptive fabrics have not come into use with either the ILR or EDF. Even the use of camo nets is debated as to its actual effectiveness. Their use is left to the discretion of field commanders.

Fuel Cracker (EDF)

This is a 2/3 cargo slot container that turns water into vehicle fuel. It can be standard equipment in an aerodyne, but is normally a separate piece of equipment. Using just the electric output of an aerodyne's reactor (which uses negligible supplies), it takes water and any locally available carbonaceous material (wood, leaves) and generates either hydrogen for fuel cells, or any other long or short-chain hydrocarbon for vehicles (anything from methane to diesel fuel). Fuel crackers are specialized deployments. Most EDF operations are expected to have access to local fuel sources shortly after landing, and securing such a supply is a basic part of any planetary landing. One fuel cracker and one aerodyne can provide sufficient fuel for an armor company, or the normal vehicle complement for a battalion.

Arms & Armor

A variety of offensive and defensive technologies are used by combatants in *Albedo*. This section lists some of the less common items characters may encounter and use.

Hot Pods (EDF)

These are used for low orbital or extremely high altitude insertion of troops. Each one takes twice the space of the gear in it (3 slots per fully equipped infantry). In a heavy EW environment they are virtually undetectable as they freefall. Inertial locators and computer controlled drogue chutes keep each group of pods in close formation (but far enough apart to avoid being caught by a single airburst weapon). Main chutes deploy at the bare edge of survivability and crumple zones in the bottom of the pod absorb the hard-landing stress.

This is not for ordinary troops. It causes 1 Awe just to deploy in such a fashion (being crammed into an oversized coffin and dropped tens or more kilometers up into a hostile environment is *not* for the meek).

The pod itself has a Deflection of 8 and 5 Body and would be treated as a vehicle for damage purposes. If the "mobility" of the pod is incapacitated, it means it no longer has a working chute.

Assault Armor (EDF)

This is a selection of form-fitting plates designed to attach to the front torso of standard battle armor. It uses a monomolecular variant with a variable ultimate yield strength and elastic modulus across its depth. The front face is extremely hard and somewhat brittle, and grades to a less hard but more ductile characteristic at the back of the plate. Troops call it "shatter plate", because that's what it does when it is hit by any significant weaponry, leaving large spider-webbed cracks in the brittle face, held in place by the ductile backing. However, in the process of shattering, it absorbs far more energy than a simple ductile deformation could. Shatter plate provides +2 Deflection and +5 Threshold to standard battle armor for one hit. It might save your life by preventing a penetration, but after that, yank it off and throw it away.

Assault armor is also available for the front and sides (including turrets) of most AV-4 variants, and has the same effects, but it weighs enough (2 tons) to drop the vehicle's speed by one level (which is about 20%). The personal plate weighs anywhere from 1 to 2 kilograms (20% of battle armor weight). This extra weight is never welcome, and for some characters it can push them over their easily carried load of twice their Body rating, even if they have dropped their kit for combat.

Assault armor is only issued in cases where exceptionally heavy resistance is expected, or troops are expected to be isolated for extended periods and need the extra survival margin. In either case, a briefing that indicates assault armor will be issued is never received with anything but subdued groans.

Assault Shield (EDF)

This is a 5 kilogram shield held in the off-hand to provide 50% cover for the person carrying it and 25% cover for up to two people behind or to the sides. It drops the damage of any weapon penetrating it by 7 (possibly to less than zero), and drops penetration from explosions by 1d20. Optionally, weapons with a damage of 7 or less are completely stopped or deflected by the shield. Assault shields are only issued when urban "house-clearing" operations are in order, where one unlucky squad member (usually an Ursine) leads the way holding the shield and a pistol or grenade, with companions providing the fire support. Assault shields or something like them can be improvised from road signs, doors or structural materials, but at reduced levels of effectiveness.

A lightweight version of an assault shield may be used by police units for riot control purposes, possibly in combination with one-handed combat staves or non-lethal stun weapons.

Battle Armor

Standard battle armor is as described in the basic rules. The weight of armor varies with species, and generally equals the wearer's Body rating (but do not count Body bonuses for being Healthy or Young). Battle armor is not really possible for species or individuals with less than 3 Body. This weight includes a standard battle helmet (advanced model is an additional .3 kilograms because of extra electronics and batteries).

EXAMPLE

Example: Auitzotl has a Body of 9. However, he is Healthy, so we count him as a Body of 8. For him, a standard battle armor has a weight of 8 kilograms. Lafigalti on the other hand has a Body of 12 (and is also Healthy), so his armor weighs 11 kilograms.

Battle armor is meant to keep a person alive, and to that end, it is more heavily armored in the most vital areas. While the Deflection averages out to 11, if you use the optional hit location rules, battle armor is rated like this:

Location	Deflection
Head	13
Neck	11
Chest	13
Stomach	13
Limbs	9
Hands or feet or tail	7

Wearing partial armor, like only a jacket, reduces the average Deflection of a full-body armor by 4, and only has half the weight of a full body armor.

Armored Space Suits multiply the mass by 1.5 and add 2 to all deflections. Concealed armor has half the mass of standard armor and can be tailored into clothing so as to be visually undetectable (though it is only a Search difficulty of 2 to detect).

ILR battle armor has a Deflection of 10, and while made to lower standards is generally a more effective piece of protection for its weight and cost, since it only has to be made for one body type (lapine) and only a few sizes.

Portable Comm Array

The PCA is a manpack version of the medium communication array that is typically mounted in a command vehicle. By virtue of a separate directional antenna and a limited frequency range, it can punch through interference about as well as the much larger vehicle unit, but at 8 kilograms plus about a kilogram more for batteries for each day of operations, it requires a dedicated operator who usually doesn't carry a weapon larger than a pistol.

What it does in play is give a platoon commander a subset of the communication functions a company HQ would have, including the ability to directly communicate with distant vehicles or aerodynes, and take full advantage of company-level tactical analysis or plan skills. It also has sufficient power and bandwidth to pass highly detailed sensor observations to other units.

The PCA is a high profile electronic signature on the battlefield. Its 8 kilogram mass normally includes three semi-disposable antennas (.5kg each), each with their own battery pack, and a small spool of optical fiber. If the comm tech feels the situation warrants it, an antenna is set up some distance away, and signals are passed to it via the optical fiber. This allows use of the PCA without giving away the exact location of the unit.

Sensor Pod

This is a vehicle-deployed unit about the size of a small person (25kg). It has a powerful burst transmitter, and a variety of 360° sensors (thermal, video, radio, radar, etc.). When placed, it acts as a static spotter with a Rote of 6. Whenever it detects something within its reporting parameters, it passes all the data it has accumulated in a short radio burst back to friendly forces. This could be to nearby ground troops, aerodynes, or conceivably even to friendly satellites. Under normal use, its batteries will last for a few months. Sensor pods can be concealed, with just the sensor head visible, though this may affect their functioning. After all, they need to be placed where they can see things, and this implies that they can also be *seen*.

A sensor pod is more of an invisible fence than a precision spotting device. It can pass data sufficient for indirect fire purposes on slow-moving targets, but cannot provide useful targeting information against anything faster than a sprinting person. Think of it as taking a data snapshot one or two times a turn.

Consider a sensor pod to have a Deflection of 7 and 5 Body, and it will operate to some degree until it has taken all its Body in damage.

Weapons

EDF weaponry is in general more sophisticated and integrated than its ILR counterparts. Even an EDF pistol can communicate wirelessly with a combat helmet to provide status on remaining clip capacity, time until next scheduled maintenance, barrel temperature and so on, while an ILR weapon may have nothing more than a laser sight and a round-chambered indicator. The larger the weapon the more sophisticated, to the same relative stan dards. An ILR rifle might have a telescopic sight with light intensification, while the EDF equivalent might have a day/night thermal sight, ballistic compensation and its

own heads-up display that highlights threats identified by other squad members.

The civilian weapon market is not well developed. There is no hunting tradition, so the only weapons are those useful in a self-defense role, and to a very small extent, competition shooting.

The EDF is extremely conservative when it comes to new weapons or armor. There is very little change in personal gear since the first war, and the more expensive the outlay, the less likely any major changes are going to be made. Functional improvements that have little capital outlay have a much better chance of working their way through the various oversight and approval committees, as do ones that re-use existing electronic or programming modules.

The ILR always looks at the bottom line. They are more likely to look at quantity as a solution instead of quality, putting a cheaper weapon solution in the hands of more soldiers, provided the cost/benefit analysis of a deployment comes up right. And this includes the appropriate profit margin for the ILR contractors bidding on the project. A proposed program could be cheap and effective, but never see production because the profit margin wasn't worth it.

Weapon Nomenclature

EDF and ILR weapons have a particular pattern in the way their weapons are named. EDF infantry weapons generally follow this format:

ABCD E-FF

Through long use and several changes in EDF structure, older weapons may have different designation structures that have been kept just for continuity's sake, but the EDF is trying to keep new developments within the standard nomenclature. Improvements of existing hardware are likely to keep their older nomenclature scheme.

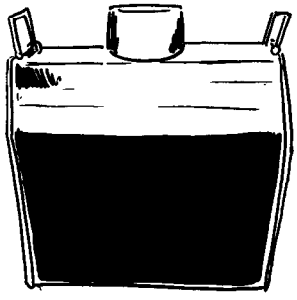
- *A:* Weapon weight/type, in a subjective sense, either Light, Medium, Heavy, Crew-served, Grenade, Powered, pistol, Shotgun or Vehicle. This designation is within its category. A medium pistol is smaller than a light rifle. This letter is not always used on existing weapons, or is in the second position instead of the first. A crew-served weapon can be fired by one person, but often has multiple people involved in its use, either because it is large or because it often uses someone like a designated spotter for optimum effect. A powered weapon is one like a multi-barrel machinegun that requires an external source of electrical power in addition to its ammunition requirements.
- *B:* The type of action the weapon has, Automatic, Bolt (single shot with magazine), Launcher (single shot), or Semi-auto.
- *CD:* The last two letters indicate the type of weapon. The last letter is almost always "W" as in Weapon, but the first letter varies. The most common terms are Kinetic Weapon and Rocket Weapon. Grenade launchers are lumped in with other kinetic weapons.
- *E:* This is the model number, and indicates how many prior versions of the weapon there have been. Many EDF weapons are still in the "1" series.
- *FF:* This either indicates the barrel length of the weapon in terms of a multiple of its caliber (for most hand-held KW's), or the weapon bore in millimeters (for vehicle weapons, RW, GW and SW's).

EXAMPLE

Example: The EDF carbine is the Light Automatic Kinetic Weapon, series 1, 30 calibers, or LAKW 1-30. While an officer's sidearm might be the PAKW 4-12, its proper designation should actually be the pSKW 4-12, the semi-auto grenade launcher GAKW is technically the GSKW 1-32, the under-barrel launcher GLKW is technically the GLKW 1-32, the VAKW heavy machinegun is technically the PAKW 2-20 and the HAKW is the PAKW 1-12.

Improved Combat Staff (EDF)

The improved combat staff comes with a blade that can be fitted onto one end to provide a two-handed weapon with a fair reach and improved damage relative to either a standard combat staff or knife alone.



Demolition Charge (ILR/EDF)

These are basic bricks of high explosive that can be set by a demolition tech to destroy or in some cases create obstacles. Placing a single demo charge takes about 1 Quality-hour, based on the Demolitions skill of the person placing them. This skill use involves examining the structure or area to be targeted, carefully placing the charge and moving to a safe distance. Elimination of any of these steps speeds the process considerably, but has its hazards.

The damage stats listed are for a single .5 kilogram block. Each time you double the number of blocks, you get +2 to the damage and +1 penetration, and each time you quadruple the number of blocks, you get +1d20 Penetration (which increases the effective blast distance).

EXAMPLE

Example: Using four bricks (2.0 kilograms) gets you +8 damage, +4 penetration and +1d20 Penetration dice.

Demolition charges can be tamped to reduce side effects. This takes 1 Quality-hour, reduces the blast distance by 1 meter and increases the damage as though twice the amount of explosives were used.

EXAMPLE

Example: Using four bricks (2.0 kilograms) in a tamped charge gets you +10 damage, +5 penetration, +1d20 Penetration dice and a 1m blast radius instead of 2m.

A demolitions kit includes a number of standard gizmos for attaching a demolition charge to slick or vertical surfaces, allowing for the creation of limpet mines and other high-risk combat explosives.

Booby Traps (ILR)

Neither the EDF or ILR uses mines. However, the ILR does plant demolition charges and has triggered machine pistols that are used as booby traps.

Spotting a booby trap or at least being suspicious enough to take a closer look is a Spot or Sixth Sense task based on the skill of the person placing the booby trap.

The problem with any booby traps used by the EDF is the possibility of civilian casualties.

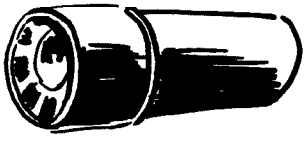
Thermobaric Grenades (EDF)

This is a slightly functional improvement on the incendiary grenade. A thermobaric grenade blasts a flammable gaseous cloud out to its effective radius, and then ignites it, instantly raising the temperature of the entire volume of space to well past the ignition point of most flammable materials. Anyone without respiratory protection has their lungs flash fried before they have time to scream, all exposed flesh is instantly seared, plastics melt, wood chars. The effect consumes all oxygen in its area, so even superheated items might not be on fire. In the end, the effects are no less horrific on personnel than a normal incendiary grenade, but it is less likely to set structures ablaze or cause other uncontrollable fires. They are still rarely issued to EDF troops. Units may be more likely to have them on certain assignments, as thermobaric grenades are more effective at wrecking materiel than the scattered flaming fragments of normal incendiaries, and do not have as high a sonic signature as fragmentation or concussion grenades.

Overwatch Software Module (EDF)

A new addition to the standard software suite available to fire teams, this is meant to be used with the stand-alone or under-barrel grenade launcher and variable grenades. If someone has a ready weapon Watching for indirect fire (and successfully spots it), the software provides plotting, aim points and timing information to properly intercept a single incoming round in flight. This is typically rolling against a 2d6 task when distance,

size and other factors are taken into account. Incoming rounds are typically intercepted at ranges of 20 meters or less, meaning the attempt is a risky proposition. Failing to intercept leaves no time to dodge or seek better cover, so anyone on an overwatch assignment should already have their foxhole dug *and* be in it. Infantry are currently being given simulator training with the software upgrade and full compliance with training requirements is expected within a few months.



Irritant Grenades (EDF/ILR)

The EDF has but rarely uses irritant grenades, as ILR infantry has breathing protection as standard equipment, though like the EDF, they aren't wearing it as often as regulations suggest they should. The ILR simply uses regular grenades (or the threat of them), thus saving money.

EDF deployments may include irritant variable grenades or rifle grenades in cases where there are likely to be civilian hostages, or the EDF has to deal with a domestic insurgency and does not want local insurgents to be martyrs for their cause.

Irritant grenade effects are stunning damage, which only takes 5 times the current Body loss to recover (instead of 100 times). The normal effect causes intense pain in the eyes, nose and lungs. The useful measures a person without breathing gear can take count as a Deflection of 7. Any species with +1 Smell or more must have breathing gear or only count as a Deflection of 3.

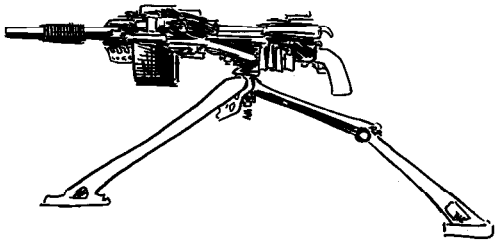
Irritant grenades generally fill an entire area with a single, low power bursting charge, and only get 1d20 for penetration. However, if the grenade goes off in an enclosed space like a room, it gets +1d20, and in a small space like a vehicle cockpit or crew compartment, it gets +2d20. Irritant grenades cause 2 Awe for each d20 of Penetration they roll. They won't kill you, but they will really make you want to get out of the area of effect.

Recon Grenade (EDF)

Designed for use with the GLKW 32 and GAKW 32 grenade launcher, it is a lightweight grenade with a high-efficiency parachute. When launched, it trails a hair-thin fiber-optic cable behind it. At apogee, the parachute deploys, and an on-board day/night camera relays a picture of the battlefield back to the firer, an image which can be interpreted by battle software, passed to other squad members and used for the targeting of indirect fire weapons. The transmission of the image through a fiber-optic cable bypasses the limitations of the EW-heavy battlefield environment. Limitations of the hardware are the same as for any other remote viewing (a 25% increase in concealment on anything you are trying to spot). The maximum range and viewing angle of the grenade can give a picture of an area 400 meters across, centered on a spot 200 meters away from the firer. This area shrinks as the grenade descends, and it has a useful lifetime of 10 turns. Spotting things in the display is a normal perception task based on the range, using either Spot or Sensor Operations (user's choice), with a default d8 for the range or a fixed target number of 4, not counting other potential modifiers. Classifying targets and passing data on for indirect fire is a Routine task for a forward observer (Navigate skill).

A Botch when using this weapon usually just means that the fiber-optic strand snapped and the grenade has been wasted. Any other use of the grenade launcher or a rifle the grenade launcher is attached to will sever the fiber-optic link.

Creative troops have also used this grenade for static remote viewing by carefully unreeling the fiber-optic line and equipping the grenade with a few extra batteries. This is a Routine Scrounge task that only takes about half of a Quality-hour to complete. Supporting characters will not do this modification on their own. Note that this use of the device is video only, since the grenade has no microphone.



MT 200 Grenade Launcher (ILR)

This is the standard weapon for a typical ILR squad grenadier. It is a 32mm grenade launcher that only fires ILR-type grenades. It is a semi-automatic weapon that fires from a 6 round detachable clip. While it is normally shoulder fired, the butt plate of the stock folds out like a flower to form a stable base plate. In this mode, the MT 200 can be used to fire all 6 shots in a clip in a single round, to provide the advantages of an indirect fire barrage. The weapon must cool down for several turns after a barrage, a feature monitored by an on-board temperature sensor that the user cannot override. This weapon comes with a compensating sight that can be detached and unreeled several meters to fire the weapon remotely. The MT200 has an unloaded mass of 5 kilograms and a loaded mass of 8 kilograms, making it a significant load for the average lapine. It is not uncommon for one or two average ILR infantry to be issued a 3kg clip just to give the grenadier extra capacity. The extra load is a "new guy" or "punishment detail" assignment that no one wants, but no one complains about it (not officially, anyway).

K3 HARM Grenade (ILR)

This is a passive homing grenade designed expressly for indirect fire use by ILR grenadiers. The heavy EW in the normal battlefield environment makes long range communication difficult, but it does not in any way make it harder to find out where jamming signals are coming from. Because of the ubiquitousness of frequency-hopping, spread-spectrum radio systems, homing in on a particular portion of the radio spectrum is next to useless. Rather, the HARM grenade is simply set to first, second and third strongest signals in its sensing arc, which is a 60° cone that is either set as directly ahead of the projectile, or oriented towards the ground in front of the grenade. The first setting is passable for airborne targets, and the second is for ground units. The theory is that the strongest signal in any given environment is likely to be an enemy squad leader or vehicular radio, and the second strongest is an average infantryman. In an area where there is an ILR jamming source, it is likely to be strongest, and so the grenade is set to ignore that and look for a weaker signal.

If there is more than one signal that qualifies, it simply homes in on the one closest to its flight path, which is modified by small servo-fins at the back of the projectile. The grenade has no thrust and operates entirely on the energy of its firing charge. It can with some difficulty hit airborne targets, but it is mostly designed to hit infantry. The warhead is a small HEDP round, a not-too-effective shaped charge surrounded by a fragmentation sleeve.

The K3 grenade counts as a homing weapon, but it has no proximity fusing, so it requires a direct hit in order to affect airborne targets.

There has not been enough combat experience and recovered examples of this device for the EDF to deploy a fairly simple counter-measure (a "bait" transmitter placed well away from the squad), but if the K3 goes into regular deployment, such a countermeasure would only lag behind it by a few months.

KA1 Canister Grenade (ILR)

The ILR grenadier is an extremely useful squad member for ranged engagements, but is little use in a close-range firefight. If operations are likely to be at short range, the MT 200 launcher is loaded with a clip of canister rounds. This turns the weapon into a 32mm semi-automatic flechette launcher. The penetration is not as good as the AW 191 carbine, but the sheer volume of projectiles thrown can cause significant blunt trauma through battle armor. A point-blank blast may not kill an EDF soldier, but it may make them wish it had.

K2 Variable Grenade (ILR)

This is the standard ILR grenade. It is a three-piece unit with a firing charge, main

explosive body and a fragmentation sleeve. The firing charge can be detached to make it a thrown grenade, and the fragmentation sleeve can be removed to make it a concussion grenade. It is armed with a simple pyrotechnic delay fuse that can be manually set in one second increments up to 12 seconds, with a default of 4 seconds. It also has an impact sensing fuse, which arms after 2 seconds. It is *not* electronically programmable. It is however, quite cheap to manufacture and just as effective when it goes off as an EDF variable grenade.

E32-3 EMP Grenade (ILR)

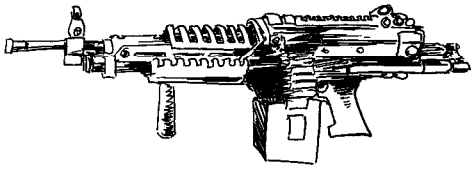
This is a specialized grenade that is seeing limited deployment (real-world field testing). The only operational difference between this and a regular grenade is that it requires a battery be discharged into the MT-100 launcher's standard power interface to charge the grenade for at least a turn before firing. This energizes a superconductor coil within the grenade. This coil is surrounded by a small conventional explosive charge (no real blast damage, but it will still scare the fur off you if it goes off in your lap). When this charge detonates, it pinches the magnetic field within the coil to absurd flux densities, which generates a corresponding electrical field that is powerful enough to destroy or damage unprotected systems, and damage or force a reboot of many protected ones. While EDF equipment is hardened against electromagnetic interference, and includes many optical isolators and circuits, virtually all devices have a radio frequency interface. This pathway into the device *is* a method of compromising the system. It can also pass interference or corrupted data streams to the closest devices in its immediately network, causing an entire integrated system such as a soldier's kit to be temporarily affected. Other devices, especially electro-optics like vision enhancement, have to be exposed to the signals from the environment, and while they can compensate for most ambient interference, a blast from an EMP grenade is sufficient to fry them.

ML 202 Booby Trap (ILR)

This is an autonomous version of the ML 199 SMG. It is in a small rectangular box with a universal mounting plate/clamp and weighs about the same as the ML 199. After a delay to let the person placing it get out of range, it activates, and will fire at anything that passes directly across its passive infrared sensor (it is always Watching, and if necessary would be considered to have a Spot Rote of 3). It has three settings to correspond with the approximate IR signature of an unarmored person, a fully armored person, and a space-suited person. On the correct setting for a target, it gets a 1d6 roll, and on an incorrect setting it gets a 1d4 roll. It can be set to activate only at certain ranges, and can also be set to ignore the first, second or third targets detected. It expends its entire clip when triggered, but can be manually operated via a fiber-optic or short-range radio link to fire one shot at a time.

The mounting clamp can be set for a fixed aim point, or set to "wobble", meaning that the weapon's recoil sprays the contents of the clip over a wide area, which would be counted as a 1d4 Suppression Fire attack out to the weapon's Contact range of 5 meters, and it cannot do Following Fire or other options that require intelligent control.

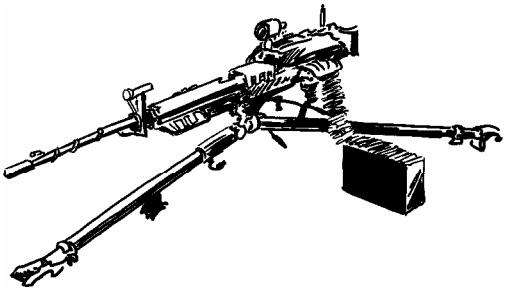
ILR special forces routinely use these weapons as a means of distracting and channeling enemy troops, often triggering the devices one shot at a time via a remote fiber-optic link. A handful of them set to cover a street can make it look like an ILR fire team is covering an area, when in fact the *actual* fire team is taking aim at your back while you are distracted...



AW-193 Light Machine Gun (ILR)

This a belt-fed version of the AW-191, which gives it better suppression fire capability. It also has a heavier, longer barrel, which gives it a marginal increase in range and damage. ILR infantry or elite units may have one squad member with this

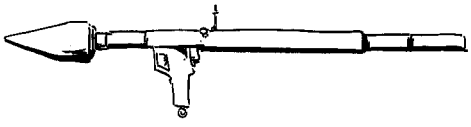
weapon. It masses 4 kilograms empty and 5.5 kilograms fully loaded. Up to 200 rounds can be carried in a box that mounts under the weapon. Vehicle installations typically have belts of nearly a thousand rounds. The AW-193 requires regular cleaning to avoid feed problems with the caseless rounds used.



AW-188 Heavy Machine Gun (ILR)

This a belt-fed 11mm single-barrel machinegun that serves the ILR in the same way (but not as well) as the HAKW serves the EDF. This is usually a vehicle mounted weapon. It is more than heavy enough to punch holes in most AV-4 variants, and lucky hits can damage aerodynes. It can of course, badly chew up any infantry that it hits. It has a standard belt of 480 rounds. EDF infantry with any experience know the silhouettes of all ILR vehicles that mount this weapon, and direct their fire accordingly. This weapon is available in a man-portable version, which is 30 kilograms for the weapon and tripod and 30 kilograms for a 480 round feed box. This may be seen in prepared defensive positions, and also serves as poor-man's anti-aerodyne weapon. The ILR may supply these to insurgents, in a version that has no ILR manufacturing marks. This way the ILR can lay blame on "rogue elements" for supplying the weapon, should there be any political fallout from their use.

The ILR also uses a modified version of the man-portable version as their equivalent of the EDF's LRCKW. It fires in semi-auto mode from a 10 round box magazine, and the weapon, electronics and tripod mass 15 kilograms. An ILR sniper team will normally be three elite troops, the sniper, a spotter and an overwatch, with the weapon carried by the sniper, the tripod and extra ammo by the spotter, with the overwatch having their normal infantry load.



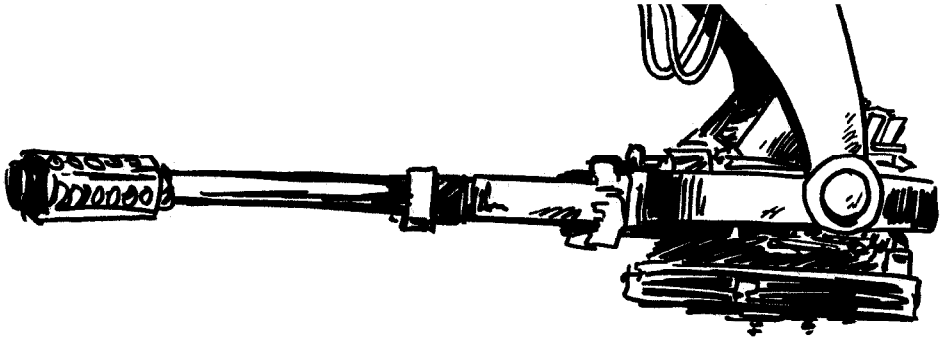
200mm Demolition Rocket (ILR)

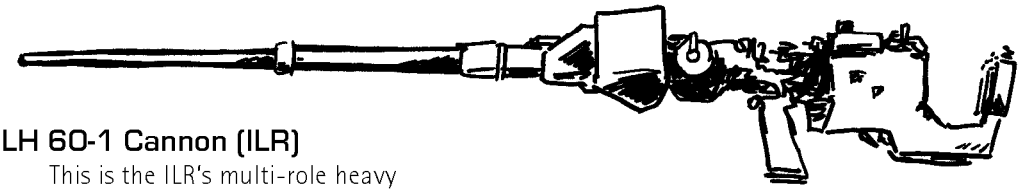
This is an unguided bunker-buster or street-clearer. Armed with a large HE warhead, it can blow a significant hole in anything smaller than a starship. Like the EDF's larger demolition rocket, it is fairly inaccurate, but it can miss by a large amount and still cause a lot of damage.

The important thing about these rockets is that the shipping container for each rocket can be used as an improvised launcher. Without any fire control system and only marginal aiming ability, the firer loses 2 marks off their skill (minimum of d4), but the appallingly high number of Botches means that this tactic is best left to "insurgents" that this weapon sometimes "regrettably" falls into the hands of.

LH 20-2 Autocannon (ILR)

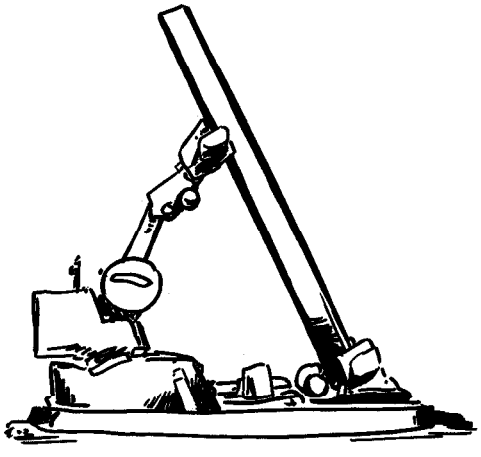
This a chain-driven autocannon firing solid kinetic penetrators. It is still in service on WA-6T variants, but is being phased out in favor of the LH 60-1 cannon.





LH 60-1 Cannon (ILR)

This is the ILR's multi-role heavy weapon. A 60mm smoothbore auto-loading cannon, it fires either high explosive or kinetic penetrator rounds. There is no shaped charge munition for the weapon at this time.



LH 100-2 Mortar (ILR)

This is a large, hopper-fed mortar and is the heaviest weapon deployed to date by the ILR. It is used exclusively in the WA-8l fire support vehicle. Its most important attribute is the ability to lay down a barrage of six shots in tight pattern in a single turn. Provided this pattern is in the right spot, the results can be devastating. Like all indirect fire weapons, mortar shells land the turn after they are fired. Because this mortar cannot be angled for horizontal fire, it has a minimum practical range of about 750 meters.

There are three main munition types for this mortar. The first is a standard HE/fragmentation round, which can be set for impact fusing or airburst. The airburst setting drops penetration by 1d20 because of the distance, but will negate up to 50% of any *ground level* cover. That is, if you are hiding behind a low wall, you might have 50% cover from an impact detonation, but none from a detonation several meters up.

The second round is an obscurement shell. It bursts into a 100% opaque cloud that will linger in an area up to 15 meters across for up to a minute (10 turns) in calm conditions. The last round is a homing HEAP round that seeks out the shape of EDF ground vehicles, though it can be programmed to most other ground vehicle shapes. This will do damage against the top armor of the vehicle on any hit, which might be a glancing shot against a sloped side, or a solid hit on the flat top.

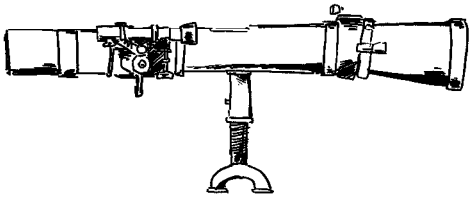
Camouflage and breaking up a vehicle's visual signature can confuse the round and cause it to veer off. Relatively simple countermeasures such as laying out blankets in the right configuration can also cause these rounds to miss. However, if a target area can be remotely viewed, the gunner can isolate particular targets so that only *that* target is sought out, or exclude particular targets so that target is never sought out.

When used in normal mode, the mortar has a sustained fire rate of one shot per 2 turns. In rapid fire mode, six shots are fired, but then the mortar must cool down for a minute before firing again, or premature detonation of rounds is possible. This limit is part of the drill for ILR crews for this weapon, and can be ignored in an emergency, if the vehicle commander orders it (this costs the crew 1 Morale).

COMMAND REVIEW • ΔΡΝΝΔΝΔ ΠΕΓΕΩΡ

ILR's Specialty Weapon

The LH 60-1 cannon has more damage, range and flexibility than any comparable EDF weapon. You can't sit at range and take it out, because it has more range than you do, and you can't hide behind something and go toe-to-toe, since it can perforate any mobile platform the EDF has. If a vehicle with this weapon is deployed intelligently, it will be a problem that requires intelligence and creativity to deal with.

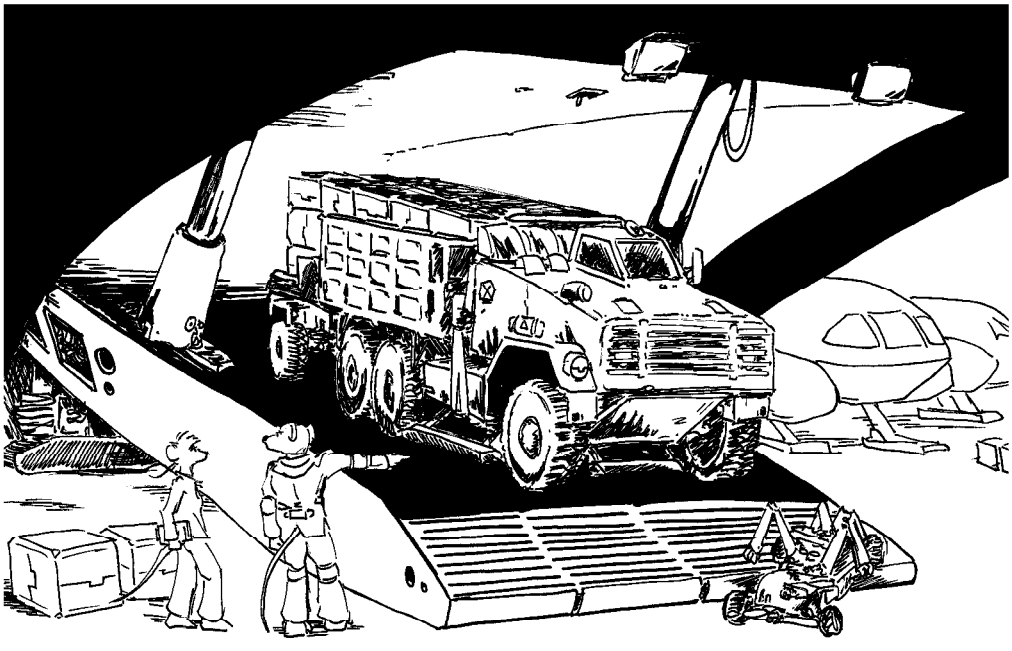


HVDD 15 (ILR):

The newest weapon to spring from the creative minds at ILR corporate labs is the hypervelocity dart launcher. This bears a similarity to a recoilless rifle or rocket launcher, but it fires a 15x250 dart at several thousand meters per second. The otherwise crippling recoil is balanced by the expulsion of an equal mass of powdered, high-density material (inert) out the back of the weapon. The high velocity is achieved by use of a propellant that borders on a high explosive. Radial blast pressures are contained within the weapon by use of an energy absorbing structure that is akin to a controlled, incomplete rupture of the barrel (similar to the process used for EDF assault armor). As a result, it is a one-shot weapon. The 5 kilogram HVDD comes with fixed sights, but normally a standard grenadier's targeting scope with altered programming is used with the weapon, and is simply moved to another dart tube after firing.

The main advantage of the weapon is that it is for all practical purposes a line of sight weapon. The projectile moves fast enough that at any range which the weapon can be aimed at, a target will have moved a negligible amount between the act of firing and the projectile reaching it. For instance, an aerodyne moving 400kph at a range of a kilometer will have only moved its length in the time it takes a dart to reach it. It is unguided, cannot be jammed, has no signature before firing and cannot be shot down. As a result, despite its moderately expensive production cost, it works equally well as an anti-armor *and* anti-aerodyne weapon. Its range is sufficient to be annoying to aerodyne pilots, and the damage is enough to make all but the largest or best armored vehicles take notice on a solid hit.

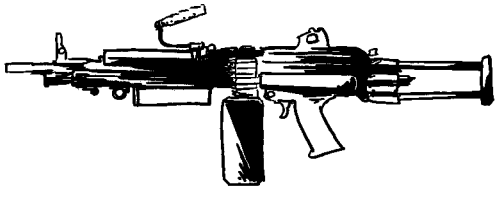
The mass of propellant gases and expelled material makes it *extremely* unsafe to use inside a vehicle or building, with effects much like setting off a concussion grenade. Panicked troops may do this because they aren't thinking clearly enough to consider the consequences. ILR infantry in open-topped personnel carriers have also been savaged on occasion when a panicked or inexperienced gunner fires an HVDD without realizing exactly *where* the back-blast is going. Outdoors, the back-blast makes the firer instantly visible, even from great distances, and creates a



100% obscurement in a 3 meter radius behind the firer. The high speed of the dart is offset by a relative inaccuracy. It has a very long useful range for a weapon of this type (sufficient to give aerodyne pilots the jitters) but performance drops markedly past that distance.

The weapon is typically deployed by the crate The defensive nature of the weapon means that it is usually delivered to troop positions by APC or armored truck, making the extra encumbrance academic.

EDF sources report that new ILR vehicle deployments have a single tube mounted alongside the standard 6mm ILR machine gun, and battle software has been updated to assist in using the weapon. Once fired, a member of the vehicle crew must expose themselves (50% cover) for at least a turn to dispose of the old tube and mount an new one. Typically, only two spare tubes are carried per vehicle, the reasoning being that no ILR vehicle is likely to survive more than three encounters with an EDF vehicle (though no one will actually say it in that fashion).



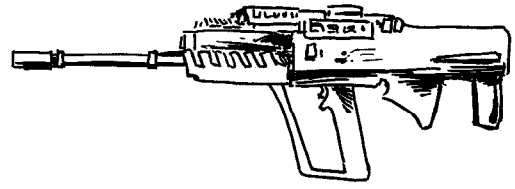
LAKW 1-62 Light Machine Gun (EDF)

This is a belt-fed version of the LAKW 1-56 rifle, with a heavier, longer barrel, and the ability to fire from a 200 round belt that is stored in a box below the weapon. It is for all practical purposes a dismounted version of the 8mm light MG found in the remote turret of many EDF vehicles. The sustained autofire capability given by the extended belt is matched by a recoil-driven forced air system to keep the barrel cool. In the event this is not sufficient, worn out barrels can be easily dismounted and replaced. The LAKW 1-62 is significantly heavier than its rifle counterpart (4.5 kilograms unloaded, 7 kilograms loaded), but is not too heavy for regular use. Typically, no more than one person in a squad would have this weapon.

COMMAND REVIEW • ΔΡΝΝΔΝΔ ΠΕΓΕΟΡ

Scorched Earth Policy

Both sides in the EDF-ILR conflict have qualms about using weapons as heavy and indiscriminate as fuel-air explosives and massive rocket bombardments. As the conflict heats up, weapons of this class (or even nastier!) will see use on both sides.

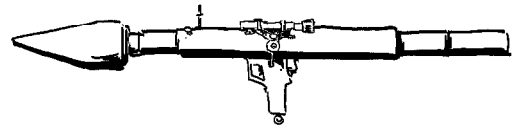


LRCKW-C Rifle (EDF)

Originally an unauthorized field modification made to an LRCKW by Ursine heavy infantry, the modification has since been graced with an official designation.

The barrel is shortened, the tripod removed, the advanced sight replaced with a standard EDF rifle sight, and the handgrip altered for the species of the end user. These modifications cut the maximum range significantly and the damage slightly, but they decrease the loaded weight to a little more than 10 kilograms.

While the requirements for approval of the modification are Byzantine, and the ammunition is several dozen times heavier than normal 8mm rifle ammunition, the heavy firepower and long range of the rifle are often quite welcome.



280mm Demolition Rocket (EDF)

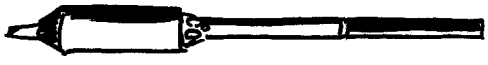
This is similar in concept and use to the ILR demolition rocket, except it has about twice the payload and a slightly better range. Each rocket packs the wallop of over 40 kilograms of high explosive, enough to crater roads, drop bridges, pulverize small to medium buildings and turn any WA-series vehicle or parked aerodyne into twisted metal. The EDF has specific guidelines on how and when these rockets can be used because of the carnage they

could wreak on civilian infrastructure and lives if one lands in the wrong spot.

PLRX Rocket (EDF)

Due to innumerable complaints and official after-action reports about the inadequacy of the PLRW as an anti-armor weapon, the EDF bureaucracy has come up with the unique solution of reclassifying it for anti-infantry use only. This is a task that the 3kg rocket is only slightly less suited for than a .25kg hand grenade, but it is deemed to make up for it with its extended range. Or so say the people who don't have to use it.

The replacement rocket is the PLRX series, which uses the same guidance module and electronics as the PLRW, but has greatly improved damage (8+14) and an angled warhead that is designed to hit the top armor of vehicles rather than the sides. However, the optimized shaped charge round rolls only 1d20 Penetration for secondary blast effects (but still gets the full 5d20 Penetration dice against what it actually strikes).

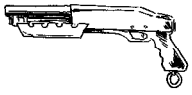


CLRW 1-96 & 1-144 Rocket (EDF)

The EDF is currently considering deployment of two new rocket launchers, which will result in the phasing out of both the PLRW (and the upgraded PLRX version). The CLRW 1-96 is a single shot 96mm rocket launcher, while the 1-144 uses a 144mm rocket. It uses a disposable launch tube to which a reusable electronics suite is clipped to. The .3 kilogram suite is the same for both the CLRW 1-96 and the larger CLRW 1-144, and the disposable launch tube and rocket weigh in at 3.7 and 6.7 kilograms, for a total weight of 4 kilograms and 7 kilograms. The total weight actually varies slightly with the rocket type used, of which there are three types planned. The first is a shaped charge warhead, the second is high explosive with a fragmentation sleeve, and the last is a controversial fuel-air munition of yet unknown specification. Actual performance figures are unknown, but are expected to be slightly better than the PLRX. All the rockets have a rudimentary multi-mode guidance module (silhouette recognition, laser designation or emissions homing). These capabilities pose few technical challenges, but are proving very expensive to cram into the relatively small and light missiles, which may prevent their deployment in any significant numbers.

SA-8c (Independent)

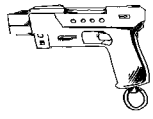
The SA-8c is representative of most civilian firearms or what would be carried by police armed with lethal weapons. It is a .5kg pistol firing standard 8x24 rounds from a removable 12 round clip. These are *not* discarding sabot or armor-piercing projectiles, giving them a lower damage and penetration than EDF-issue pistols. EDF pistols can, if required, use this ammunition at the SA-8c level of damage, and likewise, the SA-8c can fire EDF ammunition if it is available. The weapon does not come with any targeting accessories. However, within ConFed space, such weapons have micro-tagged propellant that can be tracked back to the original purchaser, and the pistol will have a small digital camera that takes a picture every time the trigger is pulled. This information is both stored in non-volatile memory and uploaded as a matter of course to law enforcement authorities, who only have access to the information with a court order.



SS-18i Shotgun (Independent)

This is a powerful personal defense weapon, and might be carried by undercover police officers, riot police or police engaged in a raid where the over-penetration of rifle ammunition might be a problem. The 2kg SS-18i uses standard shotgun ammunition, fed from a 4 round internal magazine under the barrel. This

can be reloaded in one turn if the user has both hands free and a ready supply of loose ammunition. In addition to normal shotgun ammunition, the SS-18i may use elastomer shot or slugs, which is much less lethal, but can be equally incapacitating at short range. This would have a damage of 2+6 for shot and 5+10 for slugs. Unless a critical success is rolled, neither cannot do more than an Wound effect per hit. The damage is still considered lethal in nature, as it can crack skulls and ribs at close range, and leave bruises that take weeks to heal. Neither elastomer load has any effect against a full coverage armor with a Deflection of 7 or better, nor will it penetrate cover with a Deflection of 7 or better.



NS-6 (Independent)

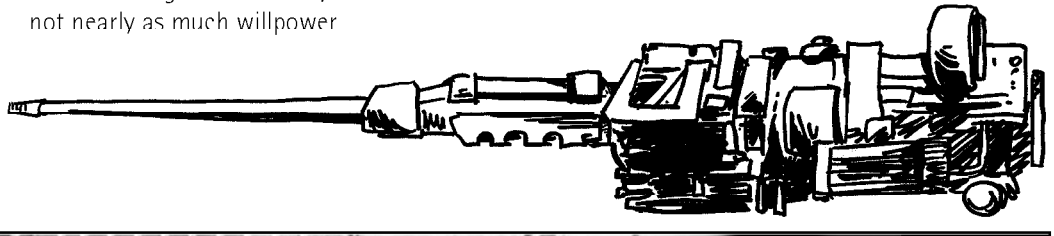
This is a 6 shot stun-gun-like weapon, but instead of trailing wires back to a central power unit, it fires oversized projectiles (about the size of a shotgun shell), which have a number of short barbed prongs in front, and a battery-powered high voltage supply in the rear. While these have a normal 0+10 damage, they cannot penetrate any Deflection greater than 5. This makes them useless against *any* fully armored target, regardless of the armor's toughness. Against targets with partial coverage, penetration is rolled for normally, as it might hit an unprotected location. In effect, it does 1d20+10 damage, or does nothing at all.

The NS-6 looks similar to a cut-down pump shotgun and masses about 2 kilograms when fully loaded. This is the normal weapon used by policing forces on most worlds, as it is incapacitating but non-lethal. Individuals who might defy an officer to use lethal force on them might think twice against an NS-6, since there is not nearly as much willpower or excuse required to use a weapon that you know the target will quickly recover from. Wounds inflicted by this or other non-lethal weapons only take 5 times the current loss to recover one point of injury, not 100 times the current loss as for lethal injuries. For most people, recovering 1 Injury can be done overnight, and 2 or 3 Injuries might take a few days.

The 0+10 damage is a limit of the ammunition's software to protect smaller species, and is *not* a hardware limit. A tech can disassemble a unit of ammunition and remove the limiters to increase the damage to 0+15. Police forces may have access to such ammunition as well, in the event they need to subdue an unruly ungulate or other large sapient, but by and large they use standard ammunition as a duty load.

KW-112 (Independent)

This is the largest weapon mounted in anything smaller than a starship. A few independent worlds have bought into a "bigger must mean better" philosophy for their Homeguard and have built vehicles capable of mounting this enormous 112mm smoothbore cannon that fires dual purpose shaped charge/high explosive rounds. Vehicles that mount this weapon can only with great difficulty be made air-transportable in a standard cargo volume, and so neither the EDF or ILR has such a weapon or plans to deploy one.



Consolidated Weapons Table (Older Ordnance in Gray)

Extra-planetary Defense Force (EDF)

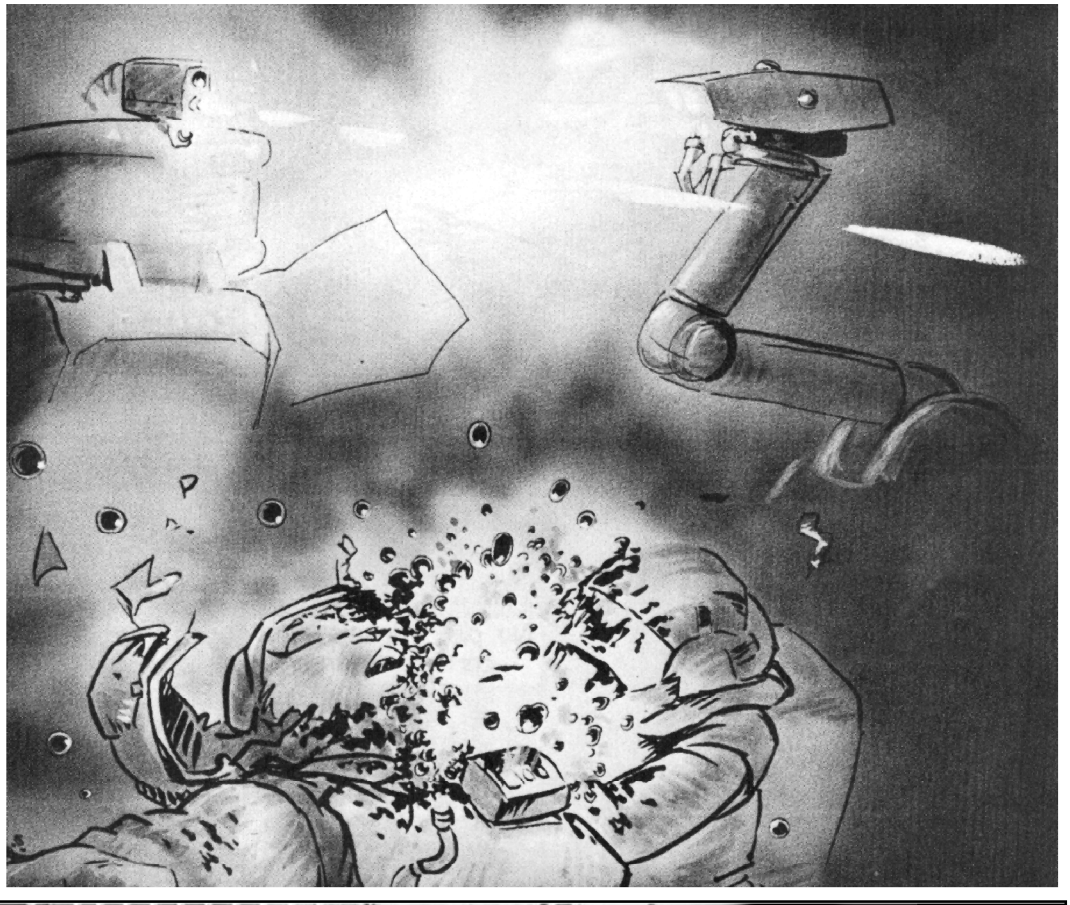
Weapon	Type	Action	Mag.	Ammo	Range	Damage	Notes
GAKW	Heavy	Semi-	12	32mm EX	S5, M20, L80, X400	0+10	Exp 2m
GLKW	Longarm	Single	1	32mm EX	S5, M20, L80, X400	0+10	Exp 2m
				Thermobaric	S5, M20, L80, X400	5+12	Exp 1m
				Anti-Tank	S5, M20, L80, X400	5+12	Exp 1m
				Irritant	S5, M20, L80, X400	0+5	Exp 3m
				Recon-	Special – see page 253		
Variable grenade	Thrown	Thrown	1	-	Thrown object	0+10	Exp 2m
Demo. charge	Demolitions	Placed	-	-	Placed weapon	2+11	Exp 2m
LAKW 1-30	Longarm	Full	24	8x56	C5, S15, M50, L330, X2300	10+9	
LAKW 1-56	Longarm	Full	24	8x56	S15, M60, L470, X3700	10+10	
LAKW 1-62	Heavy	Full	belt	8x56	S15, M65, L510, X4100	10+10	
MAKW 3-60	Heavy	Full	belt	8x64	S15, M50, L360, X2600	11+10	
LRCKW	Longarm	Semi-	8	10x56	S15, M50, L330, X2300	24+12	
LRCKW-C	Longarm	Semi-	8	10x56	S15, M45, L310, X2100	24+9	
CKW Precision	Longarm	Semi-	24	8x56	S15, M70, L560, X4600	10+10	
MPKW 2-18	Pistol	Full	24	8x24	C5, S10, M30, L190, X1100	8+7	
PAKW 4-12	Pistol	Semi-	16	8x24	C5, S10, M40, L230, X1400	8+7	
PLRW	Heavy	Single	1	-	S15, M60, L470, X3700	0+10	Exp 1m
PLRX	Heavy	Single	1	-	S15, M60, L470, X3700	8+14	Exp 1m
CLRW 1-96	Heavy	Single	1	-	S15, M60, L470, X3700		
CLRW 1-144	Heavy	Single	1	-	S15, M65, L550, X4300		
SBKW 10	Longarm	Single	9	10mm	C5, S10, M20, L40, X60	5+5	Shotgun
HAKW MG	Heavy	Full	belt	20x70	S15, M55, L410, X3000	26+13	
VAKW MG	Vehicle	Full-	belt	20x80	S15, M55, L420, X3100	33+15	
Demo. Rocket	Vehicle	Single	1	280mm	C10, S25, M135, L700	14+17	Exp 4
VAKW 24	Vehicle	Full	belt	24x120	S15, M65, L550, X4300	37+16	
VSKW 32	Vehicle	Single	20	32x200	S15, M60, L475, X3700	42+16	
VSKW 66	Vehicle	Single	20	66x350	S15, M55, L425, X3200	68+26	
				Hi-Ex	S15, M45, L320, X2200	4+12	Exp 2m
Improved Staff	Melee	Melee	-	-	C2	7+Body	

Independent Forces (Homeguard)

Weapon	Type	Action	Mag.	Ammo	Range	Damage	Notes
NS 6	Pistol	Semi	6	15mm	C2, S5, M10, L20, X40	0+10	Stunning
SA 8c	Pistol	Semi	8	8x24	C5, S10, M40, L230, X1400	6+5	
SS 18i	Longarm	Semi	4	10mm	C5, S10, M20, L40, X60	4+4	Shotgun
KW 112 Cannon	Vehicle	Single	1	112mm	S15, M50, L400, X2800	15+15	Exp 3m

Inter-Lapine Republic (ILR)

Weapon	Type	Action	Mag.	Ammo	Range	Damage	Notes
AW 191	Longarm	Full	48	6x40	S15, M50, L410, X3000	8+9	
AW 193	Heavy	Full	belt	6x40	S15, M55, L430, X3200	8+10	
ML 199	Longarm	Full	32	6x30	C5, S10, M40, L230, X1400	7+7	
MP 197	Pistol	Full	32	6x30	C5, S10, M30, L150, X800	7+6	
ML 202	Demolitions	Full	32	6x30	C5, S10, M30, L150, X800	7+6	
MS 195	Longarm	Single	12	8mm	C5, S10, M20, L40, X60	4+4	Shotgun
HVDD 15	Heavy	Single	1	15x250	S5, M20, L1000, X2200	28+18	
MT 200	Heavy	Semi-	6	32mm EX	S5, M20, L85, X375	0+10	Exp 2m
				K3 HARM	S5, M20, L85, X375	5+8	Exp 1m
				K2 Variable	S5, M20, L85, X375	0+10	Exp 2m
				E32-3 EMP	S5, M20, L85, X375	0+10	EMP
				KA1 Cann.	S5, M10, L30, X160	7+7	Shotgun
AW 188	Vehicle	Full	belt	11x65	S15, M55, L380, X2800	20+10	
Demo. Rocket	Vehicle	Single	1	200mm	S10, M25, L120, X600	12+16	Exp3m
LH 20-2	Vehicle	Full	belt	20mm	S15, M60, L475, X3700	31+15	
LH 60-1	Vehicle	Single	1	60mm	S15, M70, L550, X4600	69+25	
	-	Single	1	HE round	S15, M50, L310, X2100	2+11	Exp 2m
LH 100-2	Vehicle	Single	6	100mm	L750, X6800	6+13	Exp 3m
		Single	6	Homing	L750, X6800	13+14	Exp 1m
		Single	6	Smoke	L750, X6800	-	Exp 3m



VEHICLES

TEHNAVIZ

While there are certain archetypical vehicles in the *Albedo* universe, the basic rules do not describe any of them in great detail. The following list of EDF and ILR hardware should be of great use to anyone planning a large-scale or long-term assignment to a particular world.

The Crew number is the required crew for combat operation of the vehicle. This will always be at least 1(the driver), and any additional number is how many passengers it can carry. For a military vehicle, this is assumed to be fully equipped infantry.

EXAMPLE

Example: The MMA carries 11 people (1 driver + 10 passengers). The description of the vehicle further states this is 3 medics and 7 stretcher cases.

AV-4 series (EDF)

This is the EDF ground vehicle. It comes in a bewildering number of configurations, and a handful of repair techs with the right tools can build one from a pallet full of parts in a few days. ConFed and independent worlds use the basic chassis for industrial uses or their own armored vehicles. It can use elastomer tracks for light weight and less damage to paved surfaces, or alloy tracks for durability and toughness. The ground pressure can be altered by varying track width, so even heavy variants have good cross-country capability. Power is provided by a single gas turbine, though the chassis configuration allows for up to two. The basic AV-4 chassis takes 2/3 of a cargo slot, because the hull is only 2 meters tall. Variants with large turrets or better standing room inside will take 5/6 or a full cargo slot, but all variants must be drivable into a 6 x 3 x 3 box. This may have to be done remotely, since a tight fit may preclude opening hatches, but for quick drop and retrieval, roll-on/roll-off capability is a must.

Combat variants begin with the letter A, and non-combat or support variants begin with M. The largest armament is usually a dashed designation at the end, with the bore size in millimeters, and the letters before that indicating the weapon type. There are a number of exceptions and sub-cases, which any vehicle crew or repair tech is expected to know by heart. For instance, a second numerical designation denotes the number of infantry a dual-purpose vehicle carries.

EXAMPLE

Example: An ACPL-8 is an Armored Carrier, Personnel, Light, 8mm MG. An AKW-24-4 is an Armored Kinetic Weapon, 24mm, plus 4 infantry, while an AKW-32M is an Armored Kinetic Weapon, 32mm, plus Missile armament.

Vehicles that mass 12 tons or less are amphibious with no preparation, with a top water speed of about an eighth of their road speed. Heavier variants are amphibious with preparation, non-amphibious ones can cross solid underwater surfaces using battery power alone at depths of up to 10 meters. This does require a special cover be fitted over the turbine intake and exhaust if you plan to restart the vehicle on the other side. Some water leakage and minor electrical malfunctions are to be expected with any amphibious use, and crews are trained in the hazards of dealing with extremely large electrical currents and a sopping wet power-train.

COMMAND REVIEW • APPROVED REFERENCE

EDF vs. ILR Vehicles

As a general comparison, EDF vehicles have better protection, the largest weapons and better off-road capability than ILR vehicles, while ILR vehicles are as fast or faster on-road and require less maintenance. The ILR fields more vehicles with heavy weapons than the EDF does. Most EDF vehicles are impervious to ILR small arms fire from all angles, while most ILR vehicles are vulnerable on at least one facing to standard EDF assault rifles. ILR infantry is trained appropriately, and does not waste fire or expose itself to vehicles it cannot harm. Instead, this task is left to grenadiers or indirect fire, or ILR vehicles are called in to deal with the threat.

AKW-66

Light Tank

Top Speed: 65 kph	
Maneuver: d6 (3)	**Deflection:** 13
Size: 1	**Thresholds:** 40/50/60/80
Crew: 3+0	**Body:** 20
Armament: 24mm autocannon, 8mm coaxial MG	❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑❑❑ **Damage:** General ❶ ❷ ❸ ❹ ❺ Mobility ❶ ❷ ❸ ❹ ❺ Armament ❶ ❷ ❸ ❹ ❺

This is a light tank, armed with a 66mm smoothbore auto-loading cannon and 8mm coaxial machinegun. The main gun has a selection of kinetic penetrators, high explosive rounds and shaped charges.

AKW-32M

Urban Assault Vehicle

Top Speed: 50 kph (amphibious non-standard)	
Maneuver: d8 (4)	**Deflection:** 13
Size: 1	**Thresholds:** 44/54/64/84
Crew: 3+0	**Body:** 22
Armament: 32mm autocannon, 8mm coaxial MG, 280 mm assault rockets	❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑ ❑❑❑❑ **Damage:** General ❶ ❷ ❸ ❹ ❺ Mobility ❶ ❷ ❸ ❹ ❺ Armament ❶ ❷ ❸ ❹ ❺

This has a 32mm autocannon turret with coaxial 8mm MG, a remote 8mm MG turret, plus a 2-shot launcher for 280mm unguided assault rockets, plus 12 missiles carried under armor. It requires two turns to reload one missile, but this can be done without any crew having to expose themselves (the launcher tilts vertically and is loaded from the rear).

Use of this vehicle and the variants with even larger main guns are uncommon. They have an undesirable psychological impact on civilian populations. While a personnel carrier looks about the same, it is filled with people, who come out, talk to civilians and have a certain reassuring, if intimidating, presence. Vehicles like the AKW-32M are closed-up monsters that spit fire and belch death. Deployment is based as much on psychological and social profiles of the local civilian population as on operational needs.

Strengths of the design are extreme firepower and protection against ILR small arms. Weaknesses include a limited ammunition supply and a low top speed compared to other ILR vehicles.

AKW-72

Tank Destroyer

Top Speed: 80 kph	
Maneuver: d8 (4)	**Deflection:** 12
Size: 1	**Thresholds:** 36/46/56/76
Crew: 3+0	**Body:** 18
Armament: 72mm cannon, 8mm remote MG	❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑ ❑❑❑❑ **Damage:** General ❶ ❷ ❸ ❹ ❺ Mobility ❶ ❷ ❸ ❹ ❺ Armament ❶ ❷ ❸ ❹ ❺

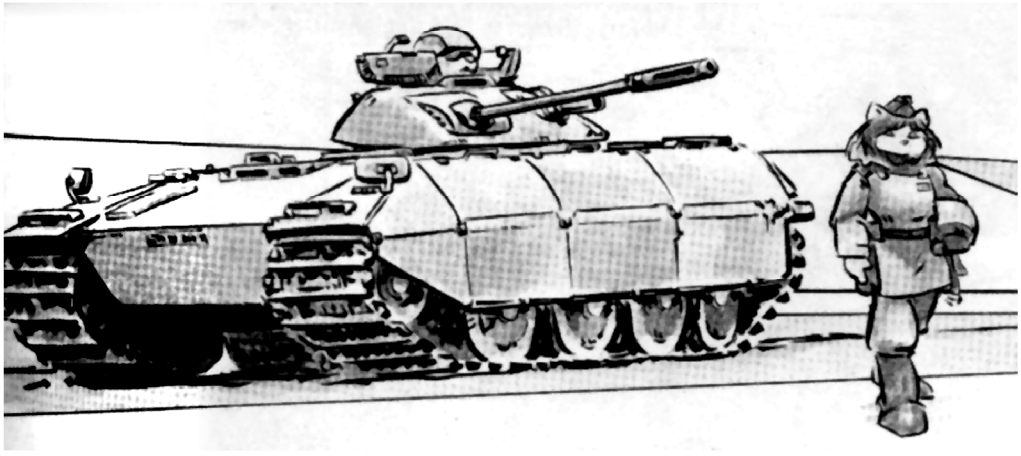
This is a tank destroyer, armed with a 72mm smoothbore auto-loading cannon and 8mm remote machinegun turret. It is less armored than the AKW-66 and relies on speed, concealment and the ability to operate at long range to survive enemy fire. It can fire high explosives, kinetic penetrators and shaped charges, with a majority of the carried rounds being kinetic penetrators. In the event that artillery support is needed, AKW-72s are used in combination with ALP combat resupply vehicles.

ACC

Army Command Center

Top Speed: 100 kph (amphibious)	
Maneuver: d8 (4)	**Deflection:** 9
Size: 1	**Thresholds:** 32/42/52/72
Crew: 1+8	**Body:** 16
Armament: none	❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑❑❑ **Damage:** General ❶ ❷ ❸ ❹ ❺ Mobility ❶ ❷ ❸ ❹ ❺ Armament ❶ ❷ ❸ ❹ ❺

The AV-4 command vehicle, with 6 work consoles, a tactical display and mid-power comm suite. Often, the modular electronics in an ACC are unhooked and set up in a folding barracks after a planetary situation has stabilized.



AKW-24-4

Heavy Infantry Vehicle

Top Speed: 50 kph (amphibious non-standard)	
Maneuver: d8 (4)	**Deflection:** 12
Size: 1	**Thresholds:** 36/46/56/76
Crew: 3+4	**Body:** 18
Armament: 24mm autocannon, 8mm coaxial MG	❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑ ❑❑❑❑
	Damage:
	General ❶ ❷ ❸ ❹ ❺
	Mobility ❶ ❷ ❸ ❹ ❺
	Armament ❶ ❷ ❸ ❹ ❺

This is a heavy infantry vehicle. It has a 24mm autocannon and coaxial 8mm MG, and room for one fire team of infantry (4 individuals). This is often an anti-armor or anti-air fire team that works in synergy with the AKW-24-4's crew on a particular facet of an operation.

This is the heaviest armed vehicle in common EDF use, and most planetary deployments will have them.

ACPV-8

Hostile Environment Operations Vehicle

Top Speed: 65 kph (amphibious)	
Maneuver: d6 (3)	**Deflection:** 11
Size: 1	**Thresholds:** 36/46/56/76
Crew: 1+4	**Body:** 18
Armament: 8mm remote MG	❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑ ❑❑❑❑
	Damage:
	General ❶ ❷ ❸ ❹ ❺
	Mobility ❶ ❷ ❸ ❹ ❺
	Armament ❶ ❷ ❸ ❹ ❺

The least common AV-4 combat variant, this is really just a life-support box on tracks. In terms of manufacture, it is an ALW with the turbine replaced by fuel cells, a single person airlock taking up part of the left rear, a solar-augmented air recycling system, fold-down bunks, extra supplies for personal spacesuits and the absolute minimum of sanitary amenities. It can provide life support for four infantry and a driver for up to a week, longer if oxygen is diverted from the mobility fuel cells, which have a nominal life of twenty hours at full power. The ACPV-8 is equipped with a variant of the MAKW 3-60 altered for vacuum and extreme temperature use.

APCL-8

Armored Personnel Carrier

Top Speed: 80 kph (amphibious)	
Maneuver: d8 (4)	**Deflection:** 13
Size: 1	**Thresholds:** 36/46/56/76
Crew: 1+8	**Body:** 18
Armament: 8mm remote MG turret	❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑ ❑❑❑❑
	Damage:
	General ❶ ❷ ❸ ❹ ❺
	Mobility ❶ ❷ ❸ ❹ ❺
	Armament ❶ ❷ ❸ ❹ ❺

Armored personnel carrier with a capacity of 8 infantry, armed with a remote 8mm single or twin machinegun turret. Access is by a rear swinging or drop-down door, and by eight roof hatches.

This vehicle is commonly modified by troops. If not modification to the actual vehicle, it may be covered with extra water jugs, spare track segments, storage bins, rolled up camo nets and anything else the infantry or driver thinks will be useful.

ALP

Army Cargo: Flatbed

Top Speed: 80 kph w/ full load (see text)	
Maneuver: d8 (4)	**Deflection:** 9
Size: 1	**Thresholds:** 28/38/48/68
Crew: 1+2	**Body:** 14
Armament: 8mm remote MG turret	❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑
	Damage:
	General ❶ ❷ ❸ ❹ ❺
	Mobility ❶ ❷ ❸ ❹ ❺
	Armament ❶ ❷ ❸ ❹ ❺

The AV-4 flatbed truck is a driver's compartment on tracks that can carry a variety of containerized loads. It can be used to resupply other vehicles. The ALP can carry containerized 2/3 cargo slot loads, including small military units like high-power comm suites, foldable barracks, and so on.

Note: The ALP has a top speed of 120kph when unloaded. Standard equipment for the ALP is a folding trailer that can carry up to 2/3 of a cargo slot in lightweight cargo. This slows an ALP down and reduces its maneuverability, but is often used for extra on-road transport capability (the trailer is wheeled).

ALE

Army Engineering Vehicle

Top Speed: 100 kph (amphibious)	
Maneuver: d8 (4)	**Deflection:** 9
Size: 1	**Thresholds:** 32/42/52/72
Crew: 1+2	**Body:** 16
Armament: 8mm remote MG turret	❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑❑❑
	Damage:
	General ❶ ❷ ❸ ❹ ❺
	Mobility ❶ ❷ ❸ ❹ ❺
	Armament ❶ ❷ ❸ ❹ ❺

A mobile machine shop, it has the tooling to make most repair parts required on a deployment. It is typically accompanied by one or more ALPs loaded with appropriate raw material stocks and common parts, particular for turbine and reactor repairs and electronic module replacement.

ALW

Army Munitions Carrier

Top Speed: 80 kph (amphibious)	
Maneuver: d8 (4)	**Deflection:** 12
Size: 1	**Thresholds:** 36/46/56/76
Crew: 1+2	**Body:** 18
Armament: 8mm remote MG turret	❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑ ❑❑❑❑
	Damage:
	General ❶ ❷ ❸ ❹ ❺
	Mobility ❶ ❷ ❸ ❹ ❺
	Armament ❶ ❷ ❸ ❹ ❺

This is a dedicated munitions carrier, designed to supply units and vehicles during combat. The ammunition compartment is separated from the crew by an armored bulkhead for crew safety, but ALW drivers are still a jittery bunch.

ARE

Army Towing Vehicle

Top Speed: 120 kph (amphibious)	
Maneuver: d8 (4)	**Deflection:** 11
Size: 1	**Thresholds:** 36/46/56/76
Crew: 1+3	**Body:** 18
Armament: 8mm remote MG turret	❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑ ❑❑❑❑
	Damage:
	General ❶ ❷ ❸ ❹ ❺
	Mobility ❶ ❷ ❸ ❹ ❺
	Armament ❶ ❷ ❸ ❹ ❺

This AV-4 tow truck has an heavy-duty winch, a bulldozer blade, a small crane, and while unofficial, most crews find room to put on an 8mm remote MG turret. The heavy engines of the ARE are sufficient to make it the fastest AV-4 variant, and it can tow most other AV-4's at a decent speed, especially if it can run a power cable to get some of the damaged vehicle's road wheels going.

AREs are typically festooned with a collection of spare bogie wheels, track segments and sometimes even an entire spare turbine engine.

An ARE can tow any EDF vehicle that still has its tracks at up to 50kph, with a maximum of d4 Maneuver.

MMA / MMSA

Military Ambulance

Top Speed: 100 kph (amphibious)	
Maneuver: d8 (4)	**Deflection:** 11
Size: 1	**Thresholds:** 32/42/52/72
Crew: 1+10	**Body:** 16
Armament: none	❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑❑❑
	Damage:
	General ❶ ❷ ❸ ❹ ❺
	Mobility ❶ ❷ ❸ ❹ ❺
	Armament ❶ ❷ ❸ ❹ ❺

The main AV-4 ambulance, capable of holding 7 stretcher cases and 3 medics. It and the other medical variants have no armament aside from smoke grenade launchers. Access is through a roof hatch for the driver and a large dropdown door in the rear.

The MMSA is an MMA variant with room for 4 stretchers and 4 medics. It is configured in this fashion if the force it is deployed with has a large fraction of the larger species. The extra room also gives medics more space to work, allowing them to treat some wounds, rather than just stabilizing them.

Both the MMA and MMSA are often in the path of enemy fire, whether directly aimed at them or not. Both vehicles have double the number of obscurement grenade launchers, allowing two uses before reloading is necessary.

MMSTA

Mobile Army Surgical Hospital

Top Speed: 100 kph (amphibious)	
Maneuver: d8 (4)	**Deflection:** 9
Size: 1	**Thresholds:** 32/42/52/72
Crew: 1+6	**Body:** 16
Armament: none	❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑❑❑
	Damage:
	General ❶ ❷ ❸ ❹ ❺
	Mobility ❶ ❷ ❸ ❹ ❺
	Armament ❶ ❷ ❸ ❹ ❺

This is a small but reasonably appointed mobile field hospital. It has 2 medical treatment tables and room for 4 medics to work (surgeon + assistant), plus ample room for storage of medical consumables. Surgeries and other emergency procedures can be performed in an MMSTA at no penalty. The surgical suite can also be dismounted and put into a folding barracks if the situation allows. The MMSTA and MMSSA have external extended fuel tankage as a standard feature, allowing them an extended run time of a week while parked and providing medical services.

MMSSA

Mobile Army Ward

Top Speed: 100 kph (amphibious)	
Maneuver: d8 (4)	**Deflection:** 9
Size: 1	**Thresholds:** 32/42/52/72
Crew: 1+4	**Body:** 16
Armament: none	❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑❑❑
	Damage:
	General ❶ ❷ ❸ ❹ ❺
	Mobility ❶ ❷ ❸ ❹ ❺
	Armament ❶ ❷ ❸ ❹ ❺

This is either a small recovery ward or a space for overworked medics to get some quiet shuteye. It has 4 bunks, minimal sanitary amenities and lockers for medical supplies.

The MMSSA can be reconfigured as an urgent care ambulance by the addition of up to 2 med couches, allowing for severely injured patients to be moved while their critical care is maintained.

ILR Vehicles

The ILR relies almost entirely on wheeled vehicles. Like the EDF, they have a standardized set of running gear for all their units.

The standard ILR chassis is the WA-series, which comes in three lengths and a variety of configurations. These configurations are 1/3, 1/2 and 2/3 cargo slots in size, though any given chassis can be bumped up a notch in terms of cargo volume by the addition of a turret or extended height cargo box. The three configurations have 4, 6 and 8 wheels, respectively. All ILR vehicles are wheeled, and their dual top speed and Maneuver ratings are for on-road/off-road conditions. ILR vehicle designations are usually WA (Wheeled Armor), followed by the number of wheels and a single letter designation that denotes the main role of the vehicle, like Scout, Personnel carrier, Tank or Indirect fire.

WA-4S

Light Reconnaissance Vehicle

Top Speed: 180/80 kph (amphibious)	
Maneuver: d8 (4)	**Deflection:** 8
Size: 1	**Thresholds:** 24/34/44/64
Crew: 2+2	**Body:** 12
Armament:	❑❑❑❑ ❑❑❑❑ ❑❑❑❑
6mm remote MG turret	**Damage:**
	General ❶ ❷ ❸ ❹ ❺
	Mobility ❶ ❷ ❸ ❹ ❺
	Armament ❶ ❷ ❸ ❹ ❺

A four-wheeled scout car, often the lead vehicle in a convoy or a patrol vehicle in relatively secure urban areas, the WA-4S has a crew of 2 (driver, commander) and can carry two extra infantry if needed. It can also be used as a small ammunition resupply vehicle. It is armed with a one-person turret mounting a belt-fed version of the AW-191 6mm machine gun. This turret may also mount a single hypervelocity dart launcher, with two reloads inside the vehicle. Entry and egress is through a door on the left side that has a vision and firing port, or a rear door that is similarly equipped. The right side has no vision or firing ports, which makes it a minor blind spot, though of course the turret gunner's vision blocks see into that arc, and the driver can see to the right front.

The lightweight WA-4S is extremely fast and nimble, and drivers with any combat experience are usually skilled and cool under pressure.

WA-8P

Infantry Support Vehicle

Top Speed: 80 kph; 35 off-road (amphibious)	
Maneuver: d8/d6 (4/3)	**Deflection:** 12
Size: 1	**Thresholds:** 40/50/60/80
Crew: 2+8	**Body:** 20
Armament:	❑❑❑❑ ❑❑❑❑ ❑❑❑❑
11mm MG turret	❑❑❑❑ ❑❑❑❑
	Damage:
	General ❶ ❷ ❸ ❹ ❺
	Mobility ❶ ❷ ❸ ❹ ❺
	Armament ❶ ❷ ❸ ❹ ❺

A common armored personnel carrier and infantry support vehicle. It is an 8-wheeled configuration, and mounts a one-person turret, with either a twin 6mm machine gun, or more commonly a single 11mm heavy machine gun, with or without a hypervelocity dart launcher alongside. The WA-8P carries 8 infantry in addition to the driver and commander, and has two secure lockers for personal shelters, food and ammunition for extended operations. There are two vision and firing ports on each side and the rear. Strengths of the WA-8P include a high road speed and good infantry protection and firepower. Weaknesses include marginal off-road capability and the requirement that the commander also operate the main weapon rather than assessing the situation and directing troops. Operational doctrine places the vehicle commander in charge of the vehicle, and the squad leader in charge of troop deployment, but the two commanders do not always work together as well as they should. Entry and egress is through a left side door or dropdown rear door, with an additional hatch in the turret.

Note: A variant model, the WA-6P, has two demolition rockets and a 6mm machine-gun, but it only has room for 6 infantry.

WA-6T

Heavy Armored Vehicle

Top Speed: 65 kph/30 kph	
Maneuver: d8/d4 (4/2)	**Deflection:** 13
Size: 1	**Thresholds:** 40/50/60/80
Crew: 3+0*	**Body:** 20
Armament:	❑❑❑❑ ❑❑❑❑ ❑❑❑❑
60mm auto-loading cannon, 11mm heavy MG	❑❑❑❑ ❑❑❑❑
	Damage:
	General ❶ ❷ ❸ ❹ ❺
	Mobility ❶ ❷ ❸ ❹ ❺
	Armament ❶ ❷ ❸ ❹ ❺

This is the heaviest armed and armored WA-series vehicle, in a six-wheel configuration. It has a two person turret armed with a 60mm smoothbore autoloader and 11mm heavy machinegun. It has a crew of three (driver, commander, gunner), and carrics no infantry. Acccss is through two roof hatches (driver and one large turret hatch), and a left-side door that has a vision block and firing port.

Strengths include the best armor and weapon of any ILR vehicle and the ability to

fire HE or KE projectiles from the main gun. Weaknesses are a heavy ground pressure, which limits off-road performance, and a limited supply of ammunition for both weapon systems.

The WA-6T is the most likely ILR vehicle to cause headaches (and casualties) among EDF troops because of its relative invulnerability to small arms from all angles, combined with its ability to easily perforate all AV-4 variants and cripple any aerodyne with a single hit. WA-6Ts without a place to hide draw unfriendly attention. To improve their chances of survival, WA-6Ts have an integrated fire control system that can link identical weapons on different ILR vehicles via a short range radio or fiber-optic link. This can provide a die type bonus as mentioned elsewhere, allowing one designated gunner on any linked vehicle to simultaneously fire several weapons on different vehicles.

EXAMPLE

Example: The WA-6T and WA-8T have the same weapons, while the WA-8P does not have a heavy weapon, but does have the same 11mm MG as the other two. When linked through the WA-6T fire control system, the WA-6T can track both 60mm cannons on one target, and the WA-8T gunner can track all three 11mm machineguns on another. If the WA-6T is taken out, all the weapons automatically revert back to local control, and of course, the gunner in each vehicle can override the slaved weapon for emergency self-defense.

Some ILR units may have WA-6T variants equipped with a 20mm autocannon and coaxial 6mm light machinegun. The turrets are interchangeable, but readily distinguishable from each other.

COMMAND REVIEW • [illegible]

Maneuver Downgrades

Remember that a vehicle's Maneuver is downgraded by its Size. The only reason it is not listed with this already taken into account is so all size modifiers in combat are uniformly applied.

WA-8X

Staging Vehicle

Top Speed: 100 kph/ 40 kph (amphibious)	
Maneuver: d8/d6 (4/3)	**Deflection:** 12
Size: 1	**Thresholds:** 36/46/56/76
Crew: 1+4	**Body:** 18
Armament: 6mm twin MG turret	❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑ ❑❑❑❑
	Damage: General ❶ ❷ ❸ ❹ ❺ Mobility ❶ ❷ ❸ ❹ ❺ Armament ❶ ❷ ❸ ❹ ❺

This eight-wheeled variant is used exclusively by political detachments. It is equipped with a remote 6mm double machinegun turret, a powerful radio system, secure computer consoles and fold out bunks. The storage lockers may have a variety of esoteric equipment appropriate to this particular mission. While armored, it is not meant as either an infantry carrier or combat vehicle. Rather, it is a secure place to work, sleep and keep confidential data.

WA-8T

Support Vehicle

Top Speed: 80 kph/ 35 kph (amphibious)	
Maneuver: d8/d6 (4/3)	**Deflection:** 9
Size: 1	**Thresholds:** 40/50/60/80
Crew: 3+8	**Body:** 20
Armament: 60mm auto-loading cannon, 11mm heavy MG	❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑❑❑
	Damage: General ❶ ❷ ❸ ❹ ❺ Mobility ❶ ❷ ❸ ❹ ❺ Armament ❶ ❷ ❸ ❹ ❺

A combination tank destroyer and personnel carrier. It has the same heavy cannon and 11mm machinegun turret as the WA-6T, but is much less armored and can carry eight ILR infantry. Access is through a driver's hatch, turret hatch, left side door and rear dropdown door. There are a total of six vision blocks and firing ports, two on the left side, two on the right side and two in the rear.

The WA-8T does not do anything particularly well, but it *does* do multiple things, which means it is a "cost effective" solution as far as

ILR planners are concerned. *Whatever the mission requires, throw WA-8T's at it.*

ILR infantry in general do not mind having a ride, but they are more than eager to get out of a WA-8T when heavy weapons fire starts, because they know that the vehicle is the target, and it isn't likely to survive that kind of attention.

WA-6P

Light Support Vehicle

Top Speed: 80 kph/ 35 kph (semi-amphibious)	
Maneuver: d8/d6 (4/3)	**Deflection:** 11
Size: 1	**Thresholds:** 40/50/60/80
Crew: 2+6	**Body:** 20
Armament: 11mm heavy MG	❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑❑❑
	Damage: General ❶ ❷ ❸ ❹ ❺ Mobility ❶ ❷ ❸ ❹ ❺ Armament ❶ ❷ ❸ ❹ ❺

A shortened version of the WA-8P used exclusively by ILR special forces. It has a one-person 11mm machinegun turret and dual HVDD launcher, an improved communications suite, and it carries tethered surveillance drones much like the WA-8I. In addition to the side and rear door, it also has six roof hatches, which swing up to provide 50% cover to anyone behind them.

WA-8I

Urban Support Vehicle

Top Speed: 100 kph/ 40 kph (amphibious)	
Maneuver: d8/d6 (4/3)	**Deflection:** 9
Size: 1	**Thresholds:** 36/46/56/76
Crew: 4+0	**Body:** 18
Armament: 100mm auto-loading mortar, 6mm remote MG turret	❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑ ❑❑❑❑
	Damage: General ❶ ❷ ❸ ❹ ❺ Mobility ❶ ❷ ❸ ❹ ❺ Armament ❶ ❷ ❸ ❹ ❺

An eight-wheeled heavy fire support variant, the WA-8I is a 100mm mortar carrier with an extended ammunition capability. Using a magazine fed mortar, it can fire an entire barrage in a single turn, or fire several shots per minute (one every other turn) at a sustained rate without overheating. The WA-8I has a crew of four (driver, commander, observer/comm, gunner), and carries enough ammunition for extended use. This vehicle carries integral recon capability in the form of a tethered electric RPV that can hover quietly up to 100 meters above the vehicle, providing 360° visual and thermal coverage of the immediate area via fiber-optic strands in the tether. Two spare RPVs are carried. These RPVs are *supposed* to be reeled in and recovered because of their cost, and this takes about half a minute for one at maximum altitude. This doesn't always happen, especially if someone is using counter-battery fire on the vehicle and it needs to get under cover in a hurry.

Strengths of the WA-8I include "shoot & scoot" capability to avoid counter-battery fire, especially if it has sufficient target information to fire in burst mode and get back under cover. If the turbine is running, it can close all hatches, lift the hydraulic base-plate and jacks, and get underway two turns after firing.

Weaknesses include a relatively small amount of armor protection, which can be catastrophic when combined with a load of high explosive mortar rounds. Similarly, the entire mortar compartment must be open when the weapon is in use, giving the gunner and main weapon no protection from overhead attacks. For this reason, WA-8I's are seldom if ever deployed near the front lines and almost always have a mobile infantry escort.

WA-8C

Urban Support Vehicle

Top Speed: 100 kph/ 40 kph (amphibious)	
Maneuver: d8/d6 (4/3)	**Deflection:** 11
Size: 1	**Thresholds:** 36/46/56/76
Crew: 1+6	**Body:** 18
Armament: 6mm remote MG turret	❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑ ❑❑❑❑
	Damage: General ❶ ❷ ❸ ❹ ❺ Mobility ❶ ❷ ❸ ❹ ❺ Armament ❶ ❷ ❸ ❹ ❺

This is a standard ILR command vehicle, that performs much the same function as its EDF equivalent. ILR light and heavy infantry will not have this vehicle in their headquar-

ters squad, but will have portable computers and backpack mounted equipment that does the same thing, though with a little less sophistication.

Additional ILR Vehicles

The ILR also has a number of specialized non-combat WA-series vehicles, such as command, recovery, medical, kitchen and so on, similar to what the EDF has in the AV-4 series of vehicles. However, the ILR tends to co-opt civilian facilities for many of its needs, so other than command vehicles, the other types are far less common than their EDF equivalents.

Civilian Vehicles

There are both armored and unarmored civilian vehicles. Since EDF units are often operating in a mixed civilian/battlefield environment, some of these vehicles are worth noting. With the exception of the IKW-112, none of these vehicles have off-road capability.

Armored Truck

Improvised Civilian Vehicle

Top Speed: 100 kph	
Maneuver: d8 (4)	**Deflection:** 8
Size: 1	**Thresholds:** 32/42/52/72
Crew: 1+16	**Body:** 16
Armament: none	❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑❑❑
	Damage:
	General ❶ ❷ ❸ ❹ ❺
	Mobility ❶ ❷ ❸ ❹ ❺
	Armament ❶ ❷ ❸ ❹ ❺

When possible, ILR forces co-opt local resources. While they may have sufficient light AFVs for their mission, they never have enough armored transport to get infantry from place to place. Their solution is a fairly simple up-armoring of civilian transport. These vehicles are not meant to engage enemy vehicles, or operate in an environment with enemy aerodynes, but to protect troops from ambush by surviving Homeguard units or even disgruntled citizens. Typically, a flatbed delivery truck is used. The engine compartment and driver's station are protected, and a rectangular box of monomolecular plate is glued onto the cargo bed. This box has vision and firing ports, a drop door/ramp, and a climate control unit removed from a food delivery vehicle. The addition of seating benches fills out the interior. The normal model can carry up to 2 squads of fully equipped ILR infantry. You can increase the overall Deflection for the passengers and crew to 9 if you choose to have an open-topped vehicle.

These trucks are also used for the transport of prisoners (up to 12, plus a few guards). As a field-expedient design, variants are common. Similar vehicles may also be constructed by anti-ILR resistance movements to provide some protection during urban operations, though this is often for a single use as the vehicle is difficult to conceal during the inevitable follow-up searches and reprisals.

A better-looking and more ergonomically appointed vehicle with the same stats is often used as a light armored personnel carrier by many Homeguard units.

IKW-112

Reinforced-Chassis Civilian Vehicle

Top Speed: 65 kph	
Maneuver: d6 (3)	**Deflection:** 13
Size: 2	**Thresholds:** 48/58/68/78
Crew: 4+0	**Body:** 24
Armament: 112mm auto-loading cannon, 8mm remote MG turret	❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑❑❑
	Damage:
	General ❶ ❷ ❸ ❹ ❺
	Mobility ❶ ❷ ❸ ❹ ❺
	Armament ❶ ❷ ❸ ❹ ❺

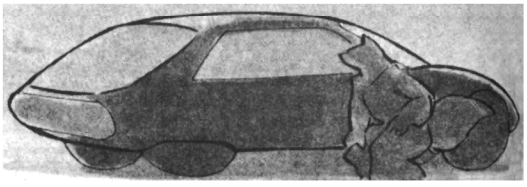
The IKW-112 is an impractical vehicle that nonetheless exists in small numbers on several independent worlds. It is built on standard AV-4 running gear, upgraded for the heavier load it carries, and structurally reinforced to handle the recoil of a massive 112mm smoothbore, auto-loading, liquid propellant cannon.

The IKW-112 is actually two separate AV-4 chassis. The front chassis contains the main weapon, ammunition, auxiliary batteries and a remote 8mm machinegun turret, while the rear chassis contains the main power plants, crew compartment and a

second remote MG turret. The crew is composed of a commander, driver, gunner and observer, with the observer also handling one of the remote MG turrets. The two units are connected by power, data and electro-mechanical couplings. IKW-112 munitions are exclusively dual purpose HE/HEAP rounds.

The design has some advantages. The articulated design allows the vehicle to move in more cramped quarters than a single large vehicle. It also enhances crew survivability, since the IKW-112 can, to some extent, fire around corners. It only has to expose the front chassis, and even if that chassis is completely destroyed, the crew in the rear chassis is likely to be untouched.

The main operational disadvantage of the IKW-112 is the remotely operated cannon. As with all remotely operated systems, any concealment a target has is increased by 25%, giving the vehicle a built-in targeting disadvantage. Another disadvantage of the IKW-112 is its size. While it is technically only two cargo equivalents in size, it would take major disassembly to ship by aerodyne. The main gun would have to be dismounted due to its barrel length. The wide tracks necessary for acceptably low ground pressure would have to be completely removed, as would the bogies. The complete separation of the crew from the main weapon compartment means that in the event of malfunction, the vehicle must withdraw from combat, as the crew will have to exit the vehicle to clear the problem. The last disadvantage of the IKW-112 is the inexperience of its crews. Existing IKW-112s are either leftovers built during the last days of the first war, or new ones built recently because of war jitters. In neither case are there experienced crews for this particular vehicle. Combined with their small numbers, they are not a major concern for ILR planners. The examples encountered by the ILR on independent worlds have been neutralized, sometimes from orbit, and EDF forces have yet to encounter one in enemy hands.



Ground Car

Civilian Residential Transport

Top Speed: 250 kph	
Maneuver: d10 (5)	**Deflection:** 3
Size: 1	**Thresholds:** 16/26/36/56
Crew: 1+3	**Body:** 8
Armament:	❑❑❑❑ ❑❑❑❑
none	**Damage:**
	General ❶ ❷ ❸ ❹ ❺
	Mobility ❶ ❷ ❸ ❹ ❺
	Armament ❶ ❷ ❸ ❹ ❺

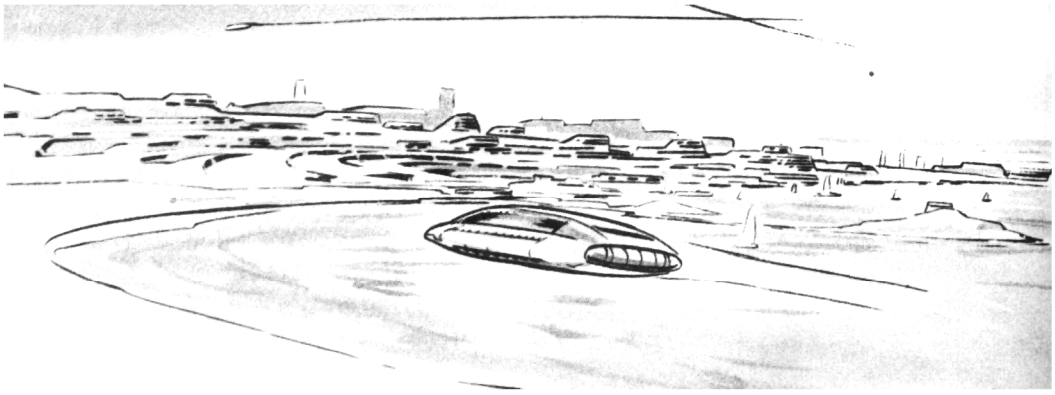
A typical passenger vehicle, capable of carrying up to four medium-sized people in comfort.. Many civilian vehicles are powered by fuel cells instead of turbines because they are quieter, cheaper and require less maintenance. Most ground cars are capable of autopilot use on high-speed urban and intercity roadways.

Commercial Truck

Civilian Cargo Transport

Top Speed: 150 kph	
Maneuver: d8 (4)	**Deflection:** 3
Size: 1	**Thresholds:** 20/30/40/60
Crew: 1+1	**Body:** 10
Armament:	❑❑❑❑ ❑❑❑❑ ❑❑
none	**Damage:**
	General ❶ ❷ ❸ ❹ ❺
	Mobility ❶ ❷ ❸ ❹ ❺
	Armament ❶ ❷ ❸ ❹ ❺

A light cargo vehicle, either with an open bed or a thin shell for weather protection. Especially in urban areas, these are also likely to be powered by fuel cells instead of turbines. The cab has room for two large or three regular-sized people, and the bed has 1/2 of a standard volume in cargo space, the exact dimensions depending on the role of the truck. The maximum cargo capacity is about 4 tons.



Air Car

Civilian Long-Range Transport

Top Speed: 320 kph	
Maneuver: d10 (5)	**Deflection:** 3
Size: 1	**Thresholds:** 20/30/40/60
Crew: 1+4	**Body:** 10
Armament:	❑❑❑❑ ❑❑❑❑ ❑❑
none	**Damage:**
	General ❶ ❷ ❸ ❹ ❺
	Mobility ❶ ❷ ❸ ❹ ❺
	Armament ❶ ❷ ❸ ❹ ❺

This is a turbine-powered personal air vehicle, capable of transporting 5 civilians and some luggage. Rotorcraft are cheaper, so these are as much a status symbol as anything else.

Armored Limousine

Civilian Dignitary Transport

Top Speed: 150 kph	
Maneuver: d8 (4)	**Deflection:** 9
Size: 1	**Thresholds:** 28/38/48/68
Crew: 1+6	**Body:** 14
Armament:	❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑
none	**Damage:**
	General ❶ ❷ ❸ ❹ ❺
	Mobility ❶ ❷ ❸ ❹ ❺
	Armament ❶ ❷ ❸ ❹ ❺

With insurgent and terrorist activity increasing, some high civilian officials have taken to traveling in unarmored civilian vehicles as a precaution. This is a typical armored limo, which has a loaded weight of about 6 tons.

Helicopter

Civilian Air Transport

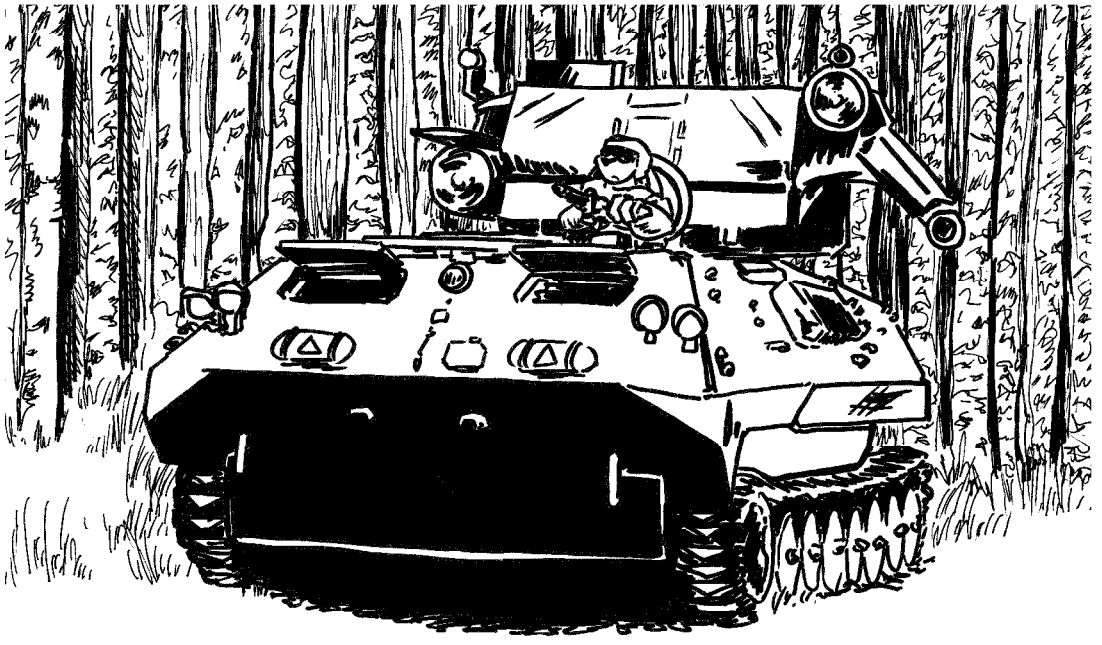
Top Speed: 400 kph	
Maneuver: 2d12 (7)	**Deflection:** 3
Size: 1	**Thresholds:** 12/22/32/52
Crew: 1+5	**Body:** 6
Armament:	❑❑❑❑ ❑❑
none	**Damage:**
	General ❶ ❷ ❸ ❹ ❺
	Mobility ❶ ❷ ❸ ❹ ❺
	Armament ❶ ❷ ❸ ❹ ❺

This would be a typical police or small business helicopter. It is unarmed and unarmored, but it is structurally sound enough to mount light machineguns (up to the AW-193 or LAKW 1-62). It is very fast and maneuverable for a non-fusion powered vehicle, but is also very fragile and easily brought down if it can be hit.

Decoys

Neither the EDF or ILR tends to use decoy vehicles, though their use is not unheard of. Normally, software interpretation of satellite recon data is sufficient to distinguish even a good decoy from the real thing. However, in conditions of lingering marginal visibility, visual, thermal and radar signatures may be confused enough that a decoy vehicle or formation can fool sensors, and thus draw enemy attention or fire, either diverting fire from real and better concealed vehicles, or revealing enemy weapon concentrations.

A decoy generally takes up 1 passenger slot for impersonating most ground vehicles. It is an inflatable construct with a battery pack and small computer that mimics the shape, coloration and heat signature of a



parked vehicle, irregularly running its 'engine', emitting barely detectable EM signals and so on. The battery is good for about a week of use, after which the decoy is disposed of. While inflatable decoys can technically be re-used, they are far cheaper and easier to simply replace.

Anyone doing recon of an area will spot a decoy vehicle with the same roll they would use to spot a real vehicle. At all but close visual range it will appear to be the real thing, especially if it has partial concealment.

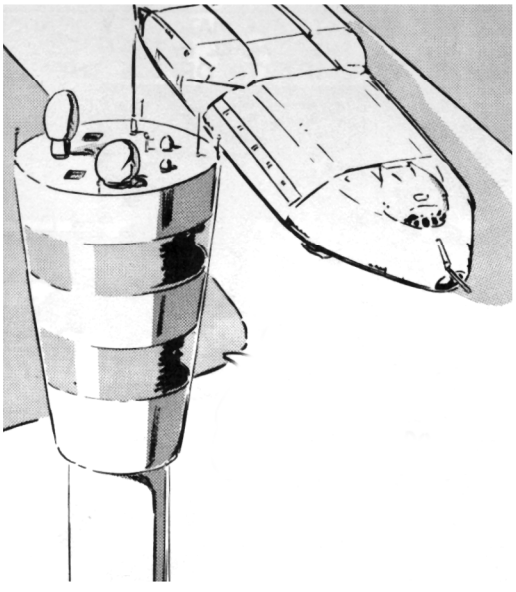
It is only a Routine task for Information Analysis, Spot or Vehicle Operation to notice the flaws or inconsistencies that mark a decoy, adjusted by any concealment or obscurement the decoy has. This leads to a balancing act. They decoy must be visible enough to be spotted, yet concealed well enough to avoid the deception being uncovered. Few are able to judge the observation skills of their foe well enough to pull this off on a reliable basis. Consequently, decoys are only issued upon specific request, and only granted if the skills of the team are deemed sufficient to be worth the investment of time.

ILR strategic planners make reasonable and fairly accurate assumptions about the quality of EDF orbital assets, and will use decoys during the opening stages of an EDF insertion. Typically, they are just a statistical dodge. A group of two mortar carriers with ready concealment may deploy two decoys. If they dodge under cover when they detect enemy aerodynes or counter-battery fire, EDF forces may blow up the decoys and not realize the ILR forces are still there. Or, the decoys could be placed in a just barely obvious fashion. EDF planners notice the deception and ignore the decoys, not realizing the real vehicles are lurking nearby for a potential ambush. If nothing else, the ILR decoys are a cost-effective means of making the EDF waste time, intelligence assets and munitions.

One very cheap and easy decoy used by artillery and special forces units is the drone decoy. This a simple helium balloon that has the same visual and reflective signature of a well-camouflaged tether drone. The balloon is released on a hair-thin strand of plastic fiber and left to float in place. Any EDF that spots it will have difficulty distinguishing it from the real thing until they spend a few minutes observing it, and so have no way to know if they are in imminent danger of being hammered by artillery. And even knowing that the drone is a simple balloon does you no good if there is an actual forward observer marking your location while you were busy staring at the sky.

Another annoying ILR tactic is to put radio-frequency and synthetic emission transponders on civilian vehicles in occupied areas, typically on public transport and fire or

rescue vehicles. These mimic the electronic emissions of WA-series vehicles. From a remote sensing viewpoint, it masks the true number and location of vehicles that might otherwise be detectable, and it prevents the EDF from using homing munitions or mines designed to look for these electronic signatures. Drivers who remove these transponders are subject to beatings or execution.



Aerodynes

Both EDF and ILR make use of aerodynes. The ILR uses them mainly as landing craft, once orbital weapons (or the threat of them) have pacified an area, while the EDF also uses them as fighters, hot-landing troop deployers and air superiority gunships. For the most part, you can use EDF cargo aerodyne stats for ILR use. It is seldom that the ILR will risk these expensive assets in operations where they know they will be lost. Rather, if they do anything at all, they will co-opt civilian rotorcraft (like police helicopters), door-mount a belt-fed light machinegun, and then put an ILR pilot behind the stick, a couple civilian "observers" in the passenger slots, and dare the EDF to shoot it down.

Designations

The naming conventions for EDF aerodynes are under revision. They originally used the same names as the civilian craft they were based off of, names that had only the vaguest bearing on the size and capability of the aerodyne. There is some movement towards an information-content designation for EDF aerodynes. The current specification (tentative) gives a letter designation for the width of the cargo bay, and a number for the length of the cargo bay, with a third number (if any) for the height. Single digit notations are assumed to be one cargo depth high (3 meters). A letter after the designation denotes any special role for that particular aerodyne, like "C" for cargo or "G" for gunship, with a second letter "A" for atmosphere-limited and "E" for exo-atmospheric capability. If there is no letter suffix, the aerodyne is assumed to be cargo and atmosphere-limited.

Cargo width	Designation
.5 unit	A
1 units	B
2 units	C
3 units	D
4 units	E

EXAMPLE

Example: Under the proposed notation scheme, the Aero C6 (the smallest cargo aerodyne in service) would become an A-1. A D-32, with a cargo bay 4 cargo units long and 3 wide, would become an E-3, and a D-12 with a bay 2 units wide and 1 long would become a C-1. The D-12 as an exoatmospheric gunship would be a C-1GE.

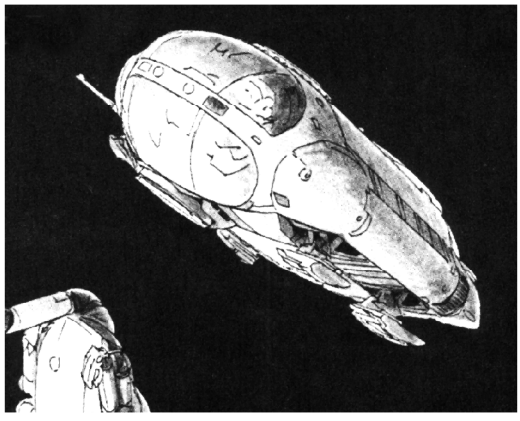
B-2 Pinnance

Chemical-Thrust Exo-atmosphere Craft

Top Speed: n/a	
Maneuver: d12 (6)	**Deflection:** 3
Size: 1	**Thresholds:** 20/30/40/60
Crew: 1+4	**Body:** 10
Armament:	❑❑❑❑ ❑❑❑❑ ❑❑
none	**Damage:**
	General ❶ ❷ ❸ ❹ ❺
	Mobility ❶ ❷ ❸ ❹ ❺
	Armament ❶ ❷ ❸ ❹ ❺

This is a very small chemical-thruster vehicle designed solely for exoatmospheric use. It's a space taxi that is small enough to be deployed from larger aerodynes and has an airlock and tiny (1 person cargo slot) hold. It is typically used for inter-ship personnel transfers of a few people, or to approach

suspicious situations where you do not want to risk an aerodyne. It has no armament and only minimal radio and sensor capability, relying on the much better capabilities of nearby ships or aerodynes.



Aero C-6

Small Aerodyne

Top Speed: 900 kph	
Maneuver: 2d12 (7)	**Deflection:** 8
Size: 2	**Thresholds:** 32/42/52/72
Crew: 1+6	**Body:** 16
Armament: 8mm remote MG *or* grenade launcher	❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑❑❑ **Damage:** General ❶ ❷ ❸ ❹ ❺ Mobility ❶ ❷ ❸ ❹ ❺ Armament ❶ ❷ ❸ ❹ ❺

This is the smallest cargo aerodyne in use with the EDF, and is identical to the civilian model except for the addition of a remote 8mm machinegun or stabilized targeting/target painting video system to provide targeting information for indirect fire units.

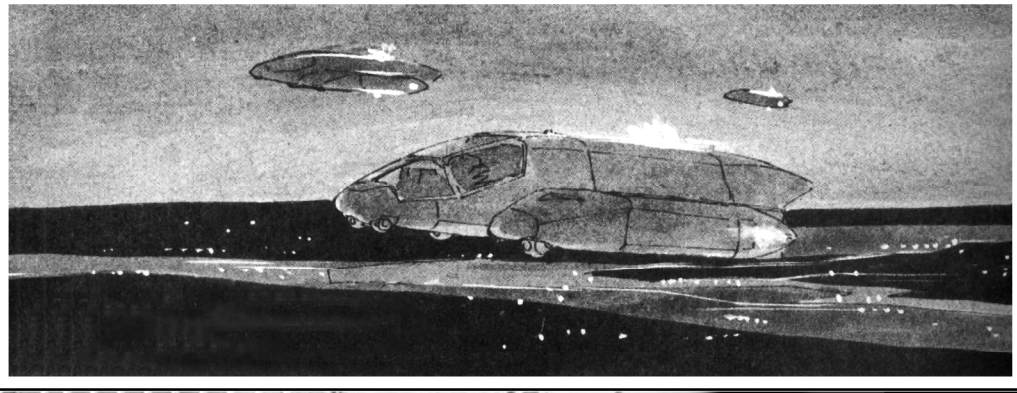
An Aero C-6 can carry 6 infantry or 1/2 a standard cargo volume, provided it is taller than it is wide (1.5m wide by 3m tall by 6m long) and weighs no more than 2,000 kilograms. A full squad *can* be crammed in for short periods, but cannot deploy into combat with any speed (2 people per turn). The Aero C-6 is rated for atmospheric use only, though there are aerodynes this size with orbital capability for use by Rapid Response squads. These C-6s have been stripped down to a Deflection of 7 and can only carry a maximum payload of 1,000 kilograms, but are otherwise the same as a C-6. Some commanders have bolted a tripod-mounted HAKW to the cargo floor and use C-6s as mini-gunships, with varying degrees of success.

D-9 Gunship

Medium Aerodyne

Top Speed: 900 kph	
Maneuver: 2d12 (7)	**Deflection:** 5 (7)
Size: 2	**Thresholds:** 48/58/68/88
Crew: 4	**Body:** 24
Armament: VAKW x 2, HAKW x 8	❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑❑❑ **Damage:** General ❶ ❷ ❸ ❹ ❺ Mobility ❶ ❷ ❸ ❹ ❺ Armament ❶ ❷ ❸ ❹ ❺

These have a fearsome and largely well-deserved reputation. Not because they are hard to shoot down. They are only slightly tougher than any other aerodyne that size. A few hits by a medium to large anti-vehicle weapon can put a serious hurt on a D-9. It's just that while you are getting those few hits, the D-9 is putting a few *hundred* hits on you. That, and the fact that an aerodyne this size is



largely immune to small arms fire does nothing to help ILR morale.

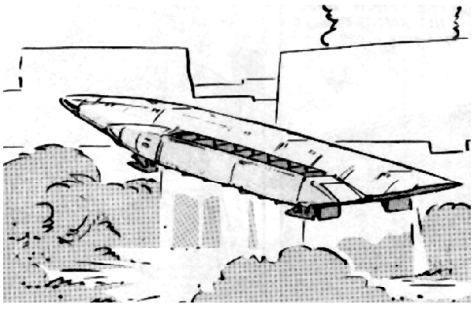
The normal situation is that ILR troops use standard doctrine when defending against D-9s. At the moment, in game terms this is as much Aimed fire by heavy weapons as possible, preferably exhorting these troops to Push their rolls. This is combined with Danger Space fire by regular infantry if the aerodyne is unlucky enough to be in carbine range. If the ILR gets lucky, they can damage or even bring one down. If they don't bring it down with the opening volley, they get plastered, and then if possible, surrender or escape (in game terms, they will be in a Panicked state).

For regular infantry dealing with aerodynes outside of rifle range, their orders are generally to get behind something *very* solid that provides 100% cover and wait it out, so their morale is not totally shattered by the time the EDF infantry comes in to mop up.

The normal D-9 crew is one pilot, one observer/fire director, and two gunners, one for the HAKWs and one for the VAKWs.

Due to the fact that D-9s mount ten very rapid fire guns and are almost always in the path of enemy fire, they require inordinate amounts of maintenance to keep in fighting trim. It is not uncommon for one or more guns to be offline, or for only three of a squadron of four to be operational, the most damaged one being used to replace depleted supplies of spares. While this is no consolation to that D-9s crew, EDF infantry are still overjoyed if they have an entire (if under strength) squadron of D-9s around. Most are happy if they get the occasional assistance of a single D-9.

As a side effect of D-9s being down for maintenance, there is one unofficial variant. This removes two HAKWs and replaces them with two extra gunner stations, giving each HAKW gunner two weapons (four gunners, eight weapons). This gives the D-9 the ability to run four separate fire missions, and makes the best use of D-9 gunners grounded by a lack of flyable D-9s.



D-12 Lander

Large Aerodyne

Top Speed: 900 kph	
Maneuver: 2d12 (7)	**Deflection:** 5 (7)
Size: 2	**Thresholds:** 48/58/68/88
Crew: 3+20	**Body:** 24
Armament: HAKW x 1	❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑❑❑
	Damage:
	General ❶ ❷ ❸ ❹ ❺
	Mobility ❶ ❷ ❸ ❹ ❺
	Armament ❶ ❷ ❸ ❹ ❺

This is the largest aerodyne deployed into combat zones. It can drop 4 squads, 2 vehicles or any combination of the two (2 standard cargo units). It has two separate loading platforms that drop from the belly, each of which has a 16 ton weight limit. A D-12 can reach orbit carrying a 16 ton load, and drop safely from orbit carrying double that. The listed top speed and maneuverability assumes a 16 ton load, which would be something like a loaded APCL-8 and two heavy infantry squads.

D-12s can be unarmed, but typically have a ventral remote heavy MG turret. D-12s go into hot zones and take a lot of hits, but standard doctrine is not to put them directly in harm's way. Troops are landed near the action, but not in the thick of it. Though large, a D-12 coming in for a landing is vulnerable to ground fire, and everyone on board with it.

D-32 Lifter

Large Aerodyne

Top Speed: 900 kph	
Maneuver: 2d12 (7)	**Deflection:** 8
Size: 3	**Thresholds:** 56/66/76/96
Crew: 3+72	**Body:** 28
Armament: HAKW x 1	❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑❑❑
	Damage: General ❶ ❷ ❸ ❹ ❺ Mobility ❶ ❷ ❸ ❹ ❺ Armament ❶ ❷ ❸ ❹ ❺

This is the largest aerodyne deployed by the EDF, but is by no means the largest aerodyne cargo lander. D-32s are heavy lifters, capable of moving a full company (including armored vehicles) to and from orbit. The only time one of these is actually shot at is shortly before some luckless EDF officer is court-martialed for incompetence in planning or executing the operation involving them.

A D-32 can carry 12 standard cargo equivalents that mass no more than a total of 160 tons. An example might be an infantry company, its command vehicles and either extended operating supplies or a few APCL-8s. It can get this mass to *and* from orbit. A D-32 can be overloaded for landing runs, but they are unwieldy enough at regular capacity and pilots do *not* like to wallow around in overloaded ones. Unladed, a D-32 is easily supersonic.

D-32s are virtually unarmed, but pack enough electronic countermeasures to thwart everything but line of sight attacks, and their heavily redundant systems can absorb quite a bit of punishment.

The D-32 configuration is a common civilian design, and ILR forces use it as well.

E-29 Liner

Large Aerodyne

Top Speed: > Mach 1	
Maneuver: 2d12 (7)	**Deflection:** 7
Size: 3	**Thresholds:** 60/70/80/100
Crew: 3+50	**Body:** 30
Armament: none	❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑ ❑❑❑❑
	Damage: General ❶ ❷ ❸ ❹ ❺ Mobility ❶ ❷ ❸ ❹ ❺ Armament ❶ ❷ ❸ ❹ ❺

The E-29 series is a standard civilian passenger vessel for either high-speed suborbital hops or ground to orbit flights. It can be configured for cargo, but is mainly used as a commercial passenger shuttle, carrying 50 passengers, their luggage and a small amount of cargo. It has no armament or military electronics.

EDF Theater Assets

There are plenty of units and equipment that characters will not deal with on a daily basis, but which are still vitally important to their mission and whose organization is going to be important in many ways.

The organizational structure that follows is for regular Battalions. These are not used for garrison work or Homeguard training and are rarely used for counter-insurgency. They are too large to be carried by anything other than a VLCC or a task force. The battalion structure is a fairly large pond for characters to swim in and a bit impersonal. However, these are the levels of structure employed when large planetary battles are fought, the heavy stuff of the War.

The EDF also uses many smaller organizational structures, especially Independent Company Commands (ICCs), Training Commands, and Ship Detachments, and the EDF

often sends very small units or even individual officers out on missions of varying importance. These will not be used in what EDF high command consider "major combat", though it may feel very "major" to the characters involved.

When a Game Host is creating a campaign concept, he or she might very well want to stick to small scale operations. If this is the choice, then the units will be much smaller and the organization structure likely will be somewhat different. However, the squad structure of the EDF is universal, so if there are squads, they will look like those presented. Other force details of small independent units can be altered to suit the campaign. The EDF is very adaptable with its force structure when it has to be.

An EDF or ILR battalion is normally 8 companies and a headquarters, and a company is normally 16 squads (4 platoons). A battalion is the smallest element at which firepower, maneuver, intelligence, and support are combined under a single commander. Battalions are meant to be tactically self-sufficient and a designed around a particular tactical mission, like artillery, anti-armor, heavy infantry and so on. Battalions are normally commanded by a Major (011+), who has a command squad as his supporting characters.

- **Battalion (011):** 8 Companies
- **Company (09):** 4 Platoons (16 Squads)
- **Platoon (08):** 4 Squads (32 infantry or 8 combat vehicles or 8 non-combat vehicles)
- **Squad (07):** 8 people or 1-2 combat vehicles + crew or 2 non-combat vehicles + crew

Battalions normally fight enemy forces they can see and engage. This defines an area of operations extending from less than 100 meters out to about 5 to 6 kilometers from a battalion's direct and indirect fire units. On offense, a battalion task force is expected to defeat a defending enemy company (4:1 odds against a dug-in defender). On defense, a battalion task force is expected to defend against and defeat an enemy regiment (dug-in against at least 2:1 odds). Battalions generally have no deep penetration capability except for perhaps Recon units, but may be charged with the execution of the fight following up an enemy retreat and securing a position. A battalion normally designates a company-size reserve as a counterattack force.

Battalions are normally 8 companies, but do not always operate at full strength, and may also have companies added for special roles, like recon, extra EW assets, specialized air defense and so on. Keep this in mind when looking at battalion descriptions. A battalion a character is in might be stretched thin, or a company might be pulled from several battalions to create a new battalion for a specific task, leaving everyone else slightly under-strength. What any given unit looks like on paper is often a far cry from what it looks like by the time it hits the ground.

A company is normally 4 platoons and a headquarters, commanded by Lieutenant Commanders (09+). Companies have very limited self-support capability and normally fight as a single unit. While individual platoons and squads may not be in contact with each other, they are all generally working on the same tactical objective.

While each company is generally designed around a specialty, within a company (16 squads) there will be specialized assets, the exact composition of which may be determined by the nature of the deployment. For instance, there may be plenty of engineer vehicles on planet, just not nearby to you. The composition of any 8-person squad assumes the unit commander (an 07+) is taking one of the roles listed, otherwise subtract 1 regular infantry from the listings.

There are usually enough EDF companies in any given deployment for each one to have a specialty, such as indirect fire, anti-armor or anti-aerodyne capability. These companies may be deployed as squads or platoons, but are usually within mutual support or response distance of each other if possible.

Companies are normally divided into platoons (4 squads), and platoons are normally kept together rather than having individual squads reassigned. From a character standpoint, it means that until such time as they get promoted to a company command, odds are they will be dealing with the same crew of platoon and squad officers and supporting

characters throughout their career (barring casualties, of course).

EDF forces typically have air superiority, and company-level groups may have anti-armor assets, EW specialists, or med/psych specialists. These assets are typically attached to the lieutenant commander in charge of the company, to deploy as the situation warrants.

In terms of Branch assignments when designing main and supporting characters, different specialties look like this:

Aerospace Operations

- *Aerodyne vehicle operations:* Aerodynes flying from ground bases as infantry support are typically considered "surface operations" for the duration of the assignment.
- *Engineering:* For most aerospace operations, this is mostly maintenance and repair personnel.
- *Freefall Infantry:* Technically aerospace operations because of where they are deployed from, they are "loaned" in the operational structure to surface operations.

Surface Operations

- *Light Infantry*
- *Heavy Infantry:* The only real difference between these two branches is that Light Infantry are trained for accuracy, and Heavy Infantry are trained to suppress. LI are better for guerilla warfare; HI are better for holding and securing areas. Otherwise, either type is interchangeable.
- *Mechanized:* This includes all crews and drivers of combat vehicles, but not any infantry attached to that vehicle (like a mobile infantry unit).
- *Mobile Surgical Hospital:* This includes all dedicated medical personnel, including medics attached to aerodyne units, but not normal infantry who happen to also have some medical training.
- *Engineering:* Engineering includes both maintenance and engineer units, and usually includes any integral infantry associated with those units.
- *Command:* This covers most of the specialized personnel needed for headquarters units, like communication techs, aides, EW experts and analysts.
- *Rapid Response:* Specialists in handling high speed aerodyne maneuvers and still being able to walk straight afterwards, these troops are used as leading edge assault and recon units, deploying from small, lightly armored aerodynes.

Administrative Operations

- *Industry and Procurement:* These guys make sure that the VLCC manufacturing centers make what the local troops need.
- *Liaison:* Liaisons are usually associated with Command, but are technically Admin personnel.
- *Quartermaster:* This includes drivers of non-combat vehicles, cooks, ombudsmen, supply clerks and so on. This includes all the mid-level managers who make sure everyone is supplied and everything get to the people it is supposed to get to.
- *Special Services:* In addition to investigators, this branch also include advocates for the anyone accused under EDF law or EDF personnel accused of crimes under local law.

The TOE (Table of Organization and Equipment) for EDF battalions looks something like this:

Reaction Battalion (EDF)

- 1 Infantry HQ Company
- 2 Light Infantry Companies
- 2 Heavy Infantry Companies
- 1 Mobile Anti-armor Company
- 1 Mechanized Infantry Company
- 1 Air Recon Company (RR)

This was the standard EDF battalion prior to Derzon and a Reaction Force based on a VLCC would consist of 4 Battalions of this type plus administrative elements. This represents a generalized, multipurpose, flexible force that can handle almost any problem. It is normally supported by Aerospace aerodyne assets drawn from the ship(s) that bring it to its deployment. It also has some inherent aerodyne transport.

Experience has shown that is model is very good for countering small ILR opera-

tions and handling security and for making raids and probes of its own. Prior to the start of the 2nd ILR War, this is the only 'ready force' out there and the only type of battalion used in combat.

In practice, the Air Recon clears the way for landings, makes raids, exploits enemy weaknesses, and covers retreats and redeployments if necessary. The Light Infantry and Heavy Infantry do the bulk of the fighting (the former in more open areas against lighter resistance; the latter against denser concentrations of enemy hard-points and vehicles). The Mobile Anti-armor moves around where they are deemed necessary, and the Mechanized Infantry company provides fire support and area security. Finally, the HQ company takes care of all the little details of engineering, repair, and administration.

This battalion, like all battalions, has attached support and administration staff (drawn from the Administration Service) that land when the battle is well in hand or (hopefully) over to take care of long term needs but these are not listed in the regular structure and are attached from Brigade as needed.

Standard Battalion

The Derzon action and others, plus a careful study of likely future engagements has demonstrated the need for new Brigade, Battalion, and Company-level structures. Some of these were incorporated into the old Reaction Battalion to form a new Standard Battalion.

- 1 Infantry HQ Company
- 5 Composite Infantry Companies (CICs)
- 1 Mobile Anti-armor Company
- 1 Air Recon Company (RR)

The old Light/Heavy dichotomy in infantry was found to be unworkable and unwieldy on the Company level and so was moved to within the Company structure itself. The mobile Infantry Company was found to be too weak to be worth the transportation costs and risks involved in landing it.

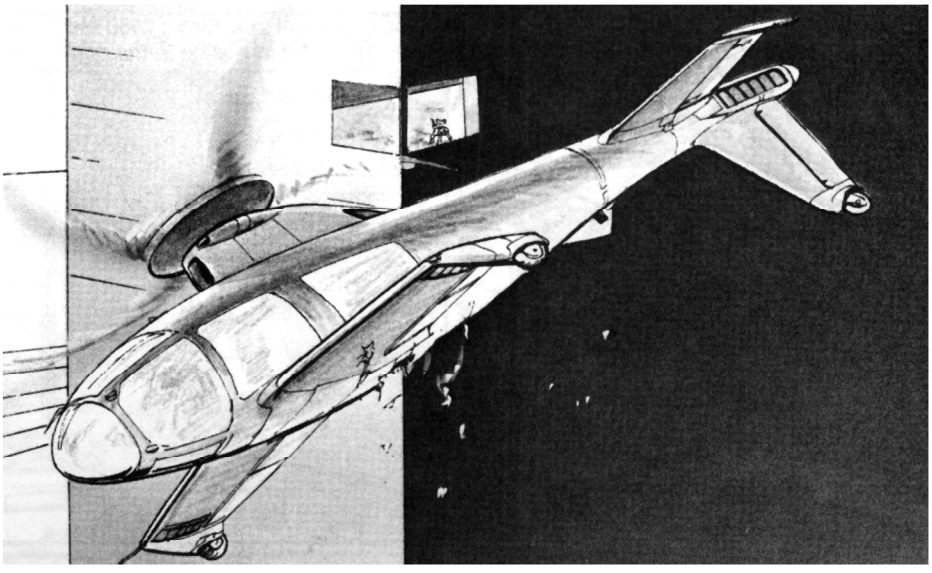
By the time the war breaks out, the Composite Infantry Company has become the standard for the EDF but some battalions still have the old HQ structure and retain the Mechanized Infantry and some do not, usually depending on the ratio of transports to gunships.

Air Assault Battalion

- Airmobile HQ company x 1 (use the regular Infantry HQ company profile but without vehicles)
- Airmobile Rifle Company x 7 (this uses the Composite Infantry Company model)

All rank requirements for command above squad level are one level higher than in other battalion structures (platoons are commanded by O9s, companies by O10s, etc.) to reflect the higher experience levels.

All Officers of O8 or better (squad leader or better) must be Main Characters and at



least half of all officers O7 or better will be Main Character level. Veteran air assault are usually cold-hearted, highly-trained killers ... or are already dead.

Air Assault and General Tactics

Air Assault units go in first if the landing is heavily contested (Derzon was not heavily contested). These units are in limited supply and exist solely to secure a landing zone so that the other battalions can land. They may also be used to disrupt enemy rear areas or as a decoy, especially if the EDF main landing is not in a contested area.

Air assault units take heavy casualties but also get the most important and interesting assignments, an important consideration for role playing.

Air Assault units are pulled from combat as soon as possible to save them for the next assault. As with other EDF units, they are not kept as a unit above platoon level from mission to mission. One reason for this is that they have a high casualty rate!

Air Assault units are new. They will certainly be a surprise for the ILR.

Brigades expecting a heavily opposed landing (once the war starts), will have 1 Air assault battalion and 3 Standard Battalions.

Aerodyne Assault Wing

- 1 Aerospace HQ company
- 4 Aerodyne gunship Squadron (16 aerodynes each)
- Aerodyne transport Squadron x 4 (16 aerodynes each)

The Aerodyne Assault Wings are the strength and soul of EDF operations and the infantryman's best friend. They are the guardian angels and the fast ride out of a bad place. Aerodyne Wings are often overworked and unable to be in all the places they are needed at the same time. Due to combat damage and pilot fatigue, they are also likely to be under strength at any given moment.

COMMAND REVIEW • AERODYNE REGROUP

The Few, The Proud...

With very rare exceptions, officers at platoon command and higher should be Main Characters controlled by the Game Host (and *not* mere Supporting Characters) in terms of the depth of their talents. You don't make it to 1st Lieutenant or better without some genuine ability to Rally others.

At full strength, an AAW can land 2 Standard Infantry Battalions or Fast Reaction Battalions (barely). Brigades have a single AAW for making combat landings, so half the brigade is landed initially and the rest ferried down through 2 or more subsequent drops using the survivors of the first attack. The gunship contingent is therefore responsible for the entire brigade, one squadron per battalion or 2 gunships per company.

Actual strength after the first few hours is more like 1 aerodyne per company and after a couple days, roughly 1 aerodyne per company half the time. But considering that a single D-9 can shred anything that moves and most things that don't, this is deemed adequate.

Mobile Infantry Battalion

- 1 Armored HQ company
- 4 Mobile Rifle company (16 vehicles each)
- 2 Mobile anti-armor company (16 vehicles each)
- 1 Armor company (32 vehicles)
- Support Engineering Company x1

It occurred to EDF planners that they might have to fight a battle where they do not have or cannot maintain aerodyne cover or where they cannot make a landing near the objective or where the ILR decides to fight a mobile battle. If any and especially if all these conditions apply, they need units that can move under hostile conditions and operate *without* the benefit of aerodynes.

Because of the major aerodyne commitment required to move the vehicles, these units are not landed until after an air assault and standard battalion have done the job of clearing a safe zone for the big transports they need.

There is serious debate over whether these battalions are even needed (or rather are worth the difficulty of transport) and the EDF only has them at the start of the war because they were up-rated Homeguard units from very politically powerful worlds.

They are kept around after the start of the war because it is generally suspected that attacks on ILR worlds are inevitable and these units will be needed.

Once the EDF actually uses them (despite the maintenance and support hassles), everyone wants more of them.

Logistics Battalion

- 1 Headquarters company
- 2 Construction Engineer companies
- 1 Aerodyne transport company (8 aerodynes)
- 2 Engineering Support Companies
- 2 Transport companies (120 vehicles)
- 1 Medical Company
- 1 Light Infantry Company

These guys fix, structurally and medically, what the regular troops break.

A logistics battalion is only needed in support of division-level activities. It provides general support, maintenance and delivery service for a division. Logistics HQ is typically sited with divisional HQ, though its assets may distributed across the theater as needed.

Because of their proximity to infrastructure and distance from front-line action, many seriously injured EDF personnel who have been rehabilitated with cybernetics end up in logistics or HQ units.

The Light Infantry Company serves as security and rear area patrol and often provides replacements for other units.

COMMAND REVIEW • ДРИИАИА ПЕГЕЦР

Player Characters & Air Assault

Characters cannot begin the game in Air Assault. Troops in the Air Assault Battalion are all drawn from the regular ranks who then receive specialized training. In game terms, all these personnel must have 18 or more missions. Any time after completing 18 *successful* missions they may apply for assault troop training. An entire unit may apply together and if accepted, they will usually be kept together up to company level. Acceptance is generally not a problem.

Air assault training takes 6 months and the character gains "Air Assault Training Package". This is a 2 Gift Package:

- +1 Astronautics
- Rapid Descent Expert.

Character who already have one or more of these Gifts receives a service Group Gift of their choice instead for each of these gifts they have.

From this point on, they use either their original branch *or* the Rapid Response Branch list for improvements. However, the next two Medium Improvements the character is eligible for are downgraded to Low Improvements.

These units are often used after a major engagement to clean up and to support Administration Service rebuilding efforts. They may also be used to support Homeguard units in a variety of circumstances. In low intensity conflicts, Logistics Battalions may be the major EDF presence on a world.

EDF Company Assets

This is the general distribution of units within each type of EDF company. Remember that specialty platoons can be attached to these companies or substituted in for another company, and that companies sometimes run under-strength due to forces beyond their local commander's control.

A company within a battalion structure is a solid fighting unit, but it is not a self-sufficient one. It can only operate for a very limited time (a few days at most) without external support in terms of fuel, food and ammunition. A company requires the transport and logistics assets of its battalion for any sort of extended operation, and without that reinforcement quickly loses its combat potential.

Independent Company Commands (ICCs) are complicated, highly variable, and not covered under the Battalion TOE. Their structure will vary and is up to the Game Host but they are still made up the squads/platoons listed here. They *are* designed to operate on their own and also tend to have up to twice the complement of a normal company, mostly in attached support squads.

A company *can* be deployed as a self-contained unit into situations where there is going to be a friendly support structure. This would be things like Homeguards, garrisons or raids that happen shortly before a main invasion. A light company can be dropped with a single D-32 flight, making it a convenient unit of force to bolster defenses in an area.

Infantry HQ Company (EDF)

- 1 Headquarters squad
- 1 Communications squad
- 1 Liaison squad
- 1 EW squad
- 2 Medical squad

- 1 Maintenance squad
- 1 Transport squad (4 vehicles)
- 4 Aerodyne transport squad (8 aerodynes)
- 4 Support squad

A headquarters company serves as the nerve center for an entire battalion. It is entirely mechanized, able to pick up and move on a few hours' notice (at worst) and is typically set up a few kilometers beyond the range of the worst of enemy weapons, which is often at the edge of reliable communication range with individual squad leaders. In such cases, platoon leaders without vehicles will often have a dedicated Comm officer in their squad, carrying a man-pack transceiver capable of punching through EM interference and acting as a communication hub for the squads under platoon command.

It is worth noting that a headquarters company for a battalion is *not* the same as the administrative group for a battalion. The headquarters company directs the fighting and makes combat decisions, while the admin group is largely considered "bean-counters". The purely administrative aspects of a headquarters company may be responsible to admin group command rather than on-site military command, and this can cause some friction on occasion, but the two groups usually work together.

EXAMPLE

Example: The liaison squad in a headquarters company is under Admin direction and follows Admin orders first, but would not turn down a request from the battalion commander unless they had very good reason.

Battalion HQ directs the fighting, but battalion Admin gets them the tools and supplies to keep doing it. The main Admin people do not even hit the ground until a secure rear area is established.

A headquarters company has greater endurance than other companies, simply because it is where the supplies are kept, but even an HQ requires regular shipments from elsewhere, which is the job of its transport assets.

Rifle Company (EDF, obsolete)

- Headquarters squad x 1
- Light infantry platoon x 4

The simplest EDF company, a Rifle Company serves much the same function as ILR light infantry, a short range assault force that can move into any terrain and provide as much fire over as large an area as possible. With some under-barrel grenade launchers added in it has a very limited anti-armor or anti-air capability, but this is neither its strong point nor its designed mission.

In detailed organization, it consists of 3 Full Platoons and 1 'short' or reserve platoon of 3 squads. The reserve platoon is often broken up and its squads sent to bolster other platoons or replace combat losses. Reserves are often used to defend flanks, to patrol rear areas, and so on, so command of the reserve platoon can be sort of punishment to ambitious officers. On the other hand, the duty is usually easier and the life expectancy is higher... The least experienced squads usually get assigned to the reserve platoon until the casualties start, then the most shot up platoon gets the duty.

Heavy infantry squads can be substituted for lights to make a Heavy Rifle Company, another obsolete structure. Separating Heavy and Light infantry by company only deprived Light Infantry of firepower.

Under modern EDF fighting doctrine, Rifle Companies are discouraged in favor of the Mobile Rifle Company (below). However, since this is the largest EDF company that can fit into one D-32 lander, it's often seen in the field where commanders work with what they have, not with what they wished they had.

Composite Infantry Company (EDF)

- 1 Infantry HQ squad
- 1 Heavy Infantry platoon
- 3 Light Infantry platoons

This company has enough anti-armor and support weapons to take care of itself against all but the direst threats and it has its own medical, communications, and engineering assets.

The Heavy Infantry Platoon theoretically has the same firepower as a Light platoon with fewer men but a higher ammunition mass requirement. It is also an understrength platoon, with only 3 squads. In

practice, it is often broken up to support the Light Platoons. Ambitious officers started transferring from Heavy to Light with this reorganization, seeing the career advancement in Heavy Infantry diminished. Less ambitious and more cautious officers started transferring *into* Heavy Infantry because of the trend to use them as fire support and leave the close and dangerous work to the Light Infantry.

Mobile Rifle Company (EDF)

- 1 Mobile Headquarters squad
- 3 Mobile Rifle platoons
- 3 Mobile Anti-armor squads

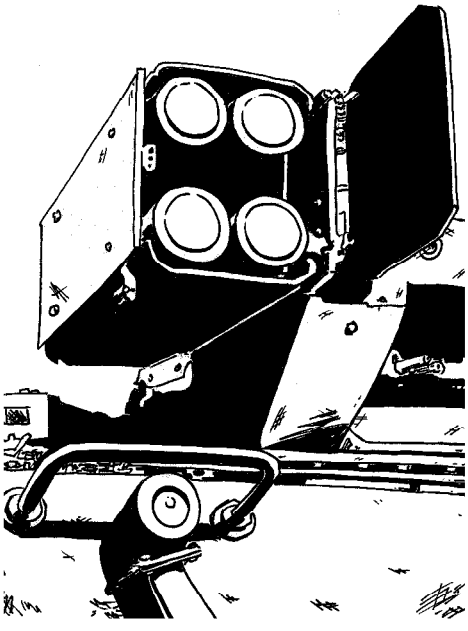
This is similar to a regular rifle company, but with the addition of ACPL-8s to the mix to give troops some high speed transport and light armor. Since mobile infantry has a "ride", they typically are more heavily equipped, with more grenade launchers, an ample supply of grenades, and more light machineguns.

The anti-armor squads give them some 'punch' and are usually kept together as a mobile support or breakthrough unit.

It takes two D-32 flights to drop a mobile rifle company because of the size and weight of the vehicles.

Mobile Anti-Armor Company (EDF)

- 1 Mobile Headquarters squad
- 5 Mobile anti-armor platoons



This is a combination of heavily armed infantry and vehicles with some anti-armor (and anti-aerodyne) punch. It is the heaviest armed and armored EDF unit that includes integral infantry.

This is also an unusual unit in that the platoons consist of 3 squads each rather than 4 squads. This makes it easier to disperse them as needed for defense or support of operations but does not interfere with concentrating them if necessary.

Armor Company (EDF)

- 1 Armored HQ squad
- 15 Armor squads

Tanks and more tanks. The actual vehicles may vary with any given deployment, but this is exclusively a vehicle unit and has no embedded infantry. A company of this type is unusual for any action that isn't expecting an extremely stiff resistance and implies a willingness to do a lot of property damage to achieve an objective. An armor company will never operate alone, but will have combined arms support in the form of something like a mobile rifle company and aerodyne support.

While a large transport like a D-32 can drop a rifle company in one trip, the mobile rifle, anti-armor and armor companies each require two or more D-32 landings.

Construction Engineer Company (EDF)

- 1 Headquarters squad
- 3 Construction Engineer Platoons
- 1 Repair squad
- 1 Demolitions Squad
- 1 Heavy Vehicle squad

Engineer companies pave the way (sometimes literally) for other units. Lightly armed and armored, their main job is to set up field fortifications, lay infrastructure for headquarters (such as hooking up to local power grid), and towing out and (if possible) repairing damaged ground vehicles.

Support Engineer Company (EDF)

- 1 HQ squad
- 2 Maintenance platoons
- 1 Demolitions Platoon
- 1 Construction Engineer Platoon (3 squads)

This is the general purpose support group that no motorized or mobile Battalion can really be without.

A demolitions platoon is 4 Combat Engineer squads, and the Construction Engineer platoon is under-strength at only 3 squads.

Transport Company (EDF)

- 1 Headquarters squad
- 15 Transport squad (60 vehicles)

A company-sized transport unit is usually only part of a logistics battalion, and the individual squads are often scattered in deployment, rather than operating as a single unit. However, a transport company would be the basis of a large convoy. A transport company can move up to 2 companies of infantry or about 18 cargo equivalents of material. This is through good terrain. Off-road, these numbers are halved.

Air Recon Company (EDF)

- 1 Air Recon HQ platoon
- 3 Air Recon platoons

Air Recon is not divided into squads. Each consists of a number of fire teams under Fire Team Leaders commanded by a Platoon Commander. The Company and Platoon commanders are all Surface (RR) Branch but they command the Aerodyne pilots and Aerodynes that are integrated into the company.

Each Air Recon Platoon consists of 6 Fire Teams of 6 men each. Each Fire Team is led by an O6 or O7 and has a Supporting Officer Character of O6 rank flying his or her transport and 4 Standard Supporting Characters, 2 of which are Riflemen, 1 of which is a Grenadier, and one of which is a Platoon Support Specialist. All Standard Supporting Characters should use the optional +1 Mark rule. The Platoon Leader is an O8 or possibly an O9 and his or her pilot is an O7.

The Air Recon Headquarters Platoon consists of 4 Light Gunships (1 Flight), 2 repair transports (with a repair tech 'fire team' under an engineer main character- drawn from the Engineering Branch) and 2 regular transports hauling the Commander (O9 or better) and his Fire team (which includes 2 support specialists instead of 1) and the Assistant Commander (O7 or better) and his Fire Team (which includes 2 support specialists instead of 1).

The light gunships can be anything from transports with snipers and gun-ports to missile carriers to various improvised weapon mounts (the most popular of which is a HAKW).

The support specialists vary with the unit but typically each platoon has 2 medics (because Air Recon is often used as Medevac), 2 Demolitions Experts and 2 EW/Comm experts. The company level specialists usually consists of 2 medics and 2 EW/Comm experts.

All Air Recon Fire Team leaders and higher officers should be considered Main Characters.

Note that there is 1 empty seat in each transport. This allows for casualties in the transportation wing or additional specialists.

COMMAND REVIEW • AFRICAN REPUBLIC

New Branch of Service: Air Recon

+1 Astronautics
+1 Athletics
+1 Firearms
+1 Sixth Sense
Rapid Descent Expert

Specialties:

Officer/Rifleman
+1 Spot
+3 Longarms

Grenadier
+1 Spot
+3 Heavy Weapons

Medic
+4 Medical Sciences

Demolitions
+4 Demolitions

Communications
+4 Sensor Operations

Air Recon Fire Teams can also be dropped from orbit and used as pathfinders or interdiction teams but only *experienced* units are used in this way.

EDF Platoon Command Structure

EDF platoon structure makes the commander of the platoon also the commander of his or her own squad. He or she must there fore have an ASL that is completely competent to handle the squad in his or her absence, preferably an O7, but an O6 will often do.

Infantry platoons have platoon assets distributed to the various squads but this squad

assignment is as much to determine which squad has to carry which platoon asset's extra gear. Platoon assets can be re-distributed as necessary or as desired by the platoon commander. Normally the comm tech stays with the platoon commander, but the command squad helps carry extra batteries, the medic's squad carries extra medical supplies and guards the wounded if necessary, and so on.

Platoon assets are still taken as supporting characters by the particular squad commander and if re-assigned, remain under the original player's control. This is an opportunity to have players take turns being under each other's command without one Main Character being over another.

EDF Squad Assets

Individual squads, as noted under company assets. These are the usual types of squads available for constructing larger forces:

- *Headquarters*
- *Communications*
- *Electronic Warfare*
- *Liaison*
- *Medical*
- *Maintenance*
- *Transport*
- *Aerodyne Transport*
- *Support*
- *Combat Engineering*
- *Construction Engineering*
- *Light Infantry*
- *Heavy Infantry*
- *Mobile Infantry*
- *Anti-Armor*
- *Armor*
- *Aerodyne Gunship*

Individual squads will usually look like the descriptions below. Note that for vehicles used as transport assets, the drivers are usually low-level specialists, and are usually Admin personnel who have no skills appropriate to the actual mission of that squad aside from the ability to use a weapon in the squad's defense. Transport drivers are usually attached to any existing transport units after they have finished getting a unit to its destination and deployed. Drivers of combat vehicles are fully combat trained and considered part of the squad's personnel, but usually do not engage in non-vehicle activities. You don't expect the driver of an ACPL-8 to bail out and join an infantry assault...

To build characters for these squads, you will need to use the revised Service Branches Tables.

Like all Variant Rules, these specialist rules are optional. Characters may still be built from *Platinum Catalyst.* These rules just add more options.

Ground Service Personnel

All Specialists Have:

Athletics +1
Firearms +2
Sixth Sense +1

All other basic skills and gifts depend on the MOS (Military Occupation Specialty) of the character, as below.

Analyst

Group Gift: Administration +1
Hike +1
Information Analysis +3

Communications Expert

Gift: Sensor Expert
Hike +1
Sensor Operations +3

Construction

Group Gift: Engineering +1
Build +3
Hike +1

Demolitions Expert

Group Gift: Engineering +1
Demolitions +3
Hike +1

Forward Observer

Gift: Indirect Fire Expert
Hike +1
Navigation +3

Heavy Weapons Expert: Grenadier

Gift: Indirect Fire Expert
Heavy Weapons +3
Hike +1

Heavy Weapons Expert: Machine Gunner

Gift: Suppression Fire Expert
Heavy Weapons +3
Hike +1

Heavy Weapons Expert: Rocketeer
Gift: Sniper Expert
Heavy Weapons +3
Hike +1

Infantry
Gift: Semi-Automatic Expert
Hike +1
Longarms +2
Navigate +1
Note: This MOS matches the original Light Infantry.

Maintenance
Group Gift: Engineering +1
Hike +1
Repair +3

Medic
Gift: Doctor
Hike +1
Medical Sciences +3

Sniper
Gift: Sniper Expert
Longarms +3

Supply
Gift: Logistics Expert
Hike +1
Scrounge +3

Tactical Advisor
Gift: Planning Expert
Hike +1
Plan +3

Vehicle Commander
Group Gift: Vehicles +1
Sensor Operations +2
Heavy Weapons +1
Repair +1

Vehicle Driver
Gift: Armored Vehicle Expert
Vehicle Operations +3
Repair +1

Vehicle Gunner
Gift: Suppression Expert
Vehicle Weapons +3
Repair +1

Aerodyne Personnel

All Aerodyne personnel receive:
Astronautics +2
G-Force +1
Pistol +1
Vehicle Operations +1

Analyst
Group Gift: Administration +1
Data Analysis +3

Cargo Specialist
Group Gift: Administration +1
Plan +2
Bureaucratics +1

EW/Communications
Gift: Sensor Expert
Sensor Operations +3

Gunner
Gift: Suppression Expert
Vehicle Weapons +3

Medic
Gift: Doctor
Medical Sciences +3

Pilot/Officer (Main Character except for Air Recon transport)
Gift: Velocity Expert
Vehicle Operations +3

COMMAND REVIEW • ARMADA RECRUIT

Variant Rule: Upgrading Gifts

In the standard rules, it's possible for characters to have access to the same Gifts twice in different steps. Normally, the character-designer is simply expected to choose a different Gift.

With this Variant Rule, a character who already has the "Expert" Gift (from the Species step, Background step, or what have you) who has the option of choosing an "Expert" Gift can choose the "Master" version instead. All requirements still apply.

For example: Perlmyn the otter chooses Sniper Expert from his list of possible species Gifts. If he trained as a Sniper, his MOS gift would be Sniper Master.

Headquarters Squad

Vehicles:

- 1 ACC command vehicle
- 1 ALP cargo vehicle

Personnel:

- 1 Commander
- 1 Secondary officer
- 2 Communications
- 2 Analysts
- 1 Specialist
- 1 Aide
- 2 Drivers

For a company level HQ the officers would be a Lieutenant Commander(09+) and a Lieutenant (07+), while for a battalion it would be a Major (011+) and a Lieutenant Commander (09+), with the rest of the personnel being various specialists (01 through 05). A headquarters squad will typically not have anything heavier than pistols or submachineguns on them, though of course, heavier weapons are going to be nearby.

A company-level HQ may be missing its vehicles if the nature of the operation precludes their transport. In such a case, most of the personnel will have portable versions of their stations, along with a small turbine generator or two and a few air-droppable supply pallets to cover the most critical supply needs.

Air Assault HQs take austerity a step further and have no equipment that they cannot carry.

COMMAND REVIEW • ДРИАИА ПЕГЕЦР

A Crew of Expediency

The description of a squad and its personnel list gives you a good idea of the specialties involved, but the actual MOS distribution of personnel within a squad is up to the Game Host, since it is to some degree subject to the personality and influence of local commanders, plus the local pool of talent.

For example, a platoon commander might normally have regular Admin branch drivers, but it is also possible that they have snagged a couple of drivers specialists for the command vehicles. Or a repair squad might have four repair techs, but there is nothing to say that one of them is former infantry with a cybernetic leg who is being retrained for a job that has ready power access.

Communications Squad

Vehicles:

- 1 ACC command vehicle
- 1 ALP cargo vehicle

Personnel:

- 1 Commander (07)
- 1 Assistant Squad Leader (05+)
- 6 Communications
- 2 Drivers

This squad is capable of handling and routing communications for an entire battalion in a combat situation. Acting with the skill and intensity of air-traffic controllers, they monitor all communications, routing requests that the system does not handle automatically, setting up ad-hoc networks for coordinating actions, and generally getting information to where it needs to be as fast as possible. Command personnel are expected to be proficient with the hardware and software involved in this squad's duties, but with more emphasis on analysis rather than technical operation. The personnel in this squad have nothing but sidearms and rely entirely on other assets to keep them intact.

Electronic Warfare (EW) Squad

Vehicles:

- 1 ACC command vehicle
- 1 ALP cargo vehicle

Personnel:

- 1 Commander (07)
- 1 Assistant Squad Leader (05+)
- 6 Communications
- 2 Drivers

An EW squad's sole purpose is to jam enemy communications and do what they can to pinpoint and mitigate the effects of enemy EW sources. They carry a large number of portable devices for jamming enemy signals and boosting friendly ones, and squads may be detailed to place and activate these devices in particular locations, either after the fighting starts, or as carried items in their initial deployment. The EW squad is also responsible for gathering intelligence from enemy signals if possible, interpreting it, and passing the analysis on to command for further action.

With an array of directional antennas, they do not have to be right on the front lines, but are easily within artillery range and are huge signal emitters for enemy homing munitions.

Liaison Squad

Vehicles:

- 1 APCL-8

Personnel:

- 1 Commander(O8)
- 1 Assistant Squad Leader (O6+)
- 4 Liaisons
- 1 Special Services
- 1 Driver

Since the EDF has to operate within urban environments and deal with governments unused to the problems and realities of war, headquarters companies have a special squad whose only job is public relations and smoothing things over when local feathers or fur gets ruffled. These personnel have higher than normal diplomatic skills and often rely on EDF intelligence about the people they are going to meet, the better to deal with any potential problems. They have a personnel carrier for mobility. Liaison units project the EDF image to those they deal with, focusing on appearance and demeanor.

These personnel carry nothing heavier than pistols. If they need protection, command assigns a fire team.

Liaison officers are generally one grade higher than other squad-level officers, but this rank is mainly for show, providing a better impression for civilian authorities.

Medical Squad

Vehicles:

- 1 MMA ambulance
- 1 MMSTA field hospital

Personnel:

- 1 Commander (O8)
- 1 Chief Medtech (O6+)
- 6 Med techs
- 1 Driver

Medical squads either set up as a field hospital in the rear and combat ambulance, or use both vehicles as aid stations, relying on aerodyne transport for the wounded. A medical squad has only one designated driver, since only the ambulance needs a full-time driver.

If more than one medical squad is assigned to a particular unit, they will usually also have one or more ALP transport vehicles attached, each carrying a mobile barracks that can be turned into a dual operating room and small recovery ward.

Medical officers traditionally have one rank higher than normal, but this only applies within the medical service and does not have any cross-branch authority.

Medics do not have time to fight, but they are in the thick of fighting more often than not. Their combat armor is specialized to allow more convenient input from diagnostic devices, and all med techs have a version of an advanced combat helmet. Medics generally have good morale, and are trained to take maximum advantage of available protection and work quickly under cover of Suppression Fire to get their charges to safety without becoming casualties themselves.

Medical personnel *may* carry concealed pistols for self-defense *outside of medical recovery situations*, but both EDF and ILR thus far respect the inviolability of medical personnel on rescue missions. For instance, ILR medics will rescue and treat EDF personnel, and even arrange return to EDF doctors if the ILR med techs cannot stabilize an EDF patient's condition. This charity and consideration is however a purely low-level phenomenon and can and has been countermanded by higher ranking ILR officers.

Maintenance Squad

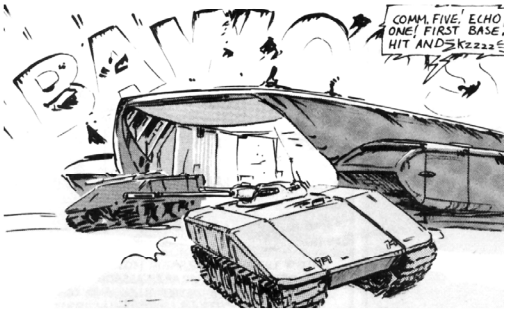
Vehicles:

- 1 ARE recovery vehicle
- 1 ARE cargo vehicle

Personnel:

- 1 Commander (O7)
- 1 Secondary officer (O5+)
- 4 Repair Technicians
- 4 Drivers

A maintenance squad has a recovery vehicle, an ALV with a machine shop module, and as much spare junk as can be crammed in and tied onto their vehicles and still have them fit into an aerodyne. The spit & polish of repair squads (actually, the lack of it) is legendary, and it is rumored that one must burn their dress uniform upon being assigned to such a squad. Repair squads often



have a bizarre sense of humor, unusual esthetic tastes and long memories for anyone who gives them grief. The only reason they can get away with this in an organization like the EDF is that they can also scrounge parts from thin air, and turn piles of junk into combat-worthy vehicles.

Maintenance crews are generally armed with submachineguns, but there is no telling exactly what else they may have lying around at any given time.

Transport Squad

Vehicles

- 2 ALP transport vehicle

Personnel:

- 1 Lead driver (03)
- 3 Second drivers (02)
- 4 Cargo tech (01)

Cargo techs use the basic skill allotment without any specialty. This is where the EDF puts goodhearted and loyal but otherwise incompetent people.

A transport squad is a 6 person squad with a couple of ALP flatbeds. Typically commanded by something like an 03, they're really just truck drivers in uniform. They know the ins and outs of the ALP, how to load and unload the cargo modules, and the arcane intricacies of getting a portable barracks in and out of shape. They are issued submachineguns but would probably have trouble telling someone where they are if asked. They are issued full armor but quite often are found with only partial or no armor, since it gets too hot or too restrictive of mobility when trying to handle dangerously heavy loads. Most transport squads have a disproportionate number of the heavier species, and they are more used to getting physical in stressful situations (+1 Brawl).

Aerodyne Transport Squad

Vehicles:

- D-12 or D-32 cargo aerodyne

Personnel:

- 1 Pilot (07)
- 1 Gunner
- 1 EW Specialist
- 2 Cargo specialists
- 1 Senior Repair Tech (05+)
- 1 Repair Tech
- 1 Flight Specialist

An aerodyne transport squad is 6 people and one aerodyne, usually a D-12. Aside from the pilot and gunner, there are two specialists who manage the actual cargo loading and handle the scheduling of cargo or airlift operations in combination with battalion command, and two repair techs whose only job is to keep the D-12 flying. Of this squad, the pilot is usually the only officer, but a wise pilot always pays heed to the advice of the senior repair specialist, who is in charge of ground operations by tradition, even if not in the formal command structure. A command squad for aerodyne transport will be headed by an 08, and will have an administrative specialist and a dedicated medic with a specialty in flight-related conditions. While maybe only an S4, the medical flight specialist has the authority to ground a pilot for medical reasons. This specialist will also be called on to assist medical squads when doing medevac flights of injured personnel.

Support Squad

Vehicles:

- 2 ALV transport vehicle

Personnel:

- 1 Senior Ombudsman (07)
- 2 Ombudsmen (05+)
- 3 General Service Personnel
- 1 Morale Specialist
- 1 Driver

Though most use Admin or Specialist profiles, these soldiers are most definitely in the Surface Branch and use Surface Branch ranks. They are Surface Branch's counterweight to Admin control of their resources.

This is the general purpose 4F squad (Food, Fuel, Firearms & Fun). Their job is to make sure Admin knows exactly what the ground forces

need, and to make sure they get as much of it as possible. Each squad can generally meet the full needs of two companies, and 4 support squads can handle a battalion.

The "Morale Specialists" are experts at finding morale boosters, which can range from unique entertainment to fresh food to setting up networks for allowable mingling opportunities. The "ombudsmen" are professional scroungers whose talent is coming up with anything that Admin can't deliver on or Liaison can't sweet-talk local government out of. They have a fairly loose discretionary budget and probably not enough oversight ... which is to say that they will deal with whoever can deliver the goods and make up something acceptable for the paperwork later. As long as field commanders have sufficient fuel and food and morale stays high, no one looks too closely at exactly how it was acquired.

Support squads have very little combat talent and seldom carry anything larger than a pistol or submachinegun, but they often have access to significant hardware. If you want to role-play an EDF unit that is in the thick of things, but not directly involved in combat, support units have a lot of possibilities.

Combat Engineering

Vehicles:

- 1 ARE recovery vehicle

Personnel:

- 1 Commander (07)
- 1 Squad Leader (05+)
- 4 Demolition specialists
- 2 Drivers

Combat Engineers are trained in rapid, reliable construction and efficient, safe demolition. If there are too many booby traps for a platoon's engineer to handle, he or she brings in the Combat Engineers. For any unit that operates around either aerodynes or ground vehicles in or near combat, Combat Engineers are indispensable.

Engineer squads are issued I-56 rifles like most everyone else but unlike many other support units, Combat Engineers are often in a position to actually use them. Also, you never know what they have picked up off of wrecks, or what they did with it. They are not as bad as maintenance units in this regard, but they do a lot of transfers of equipment back and forth.

Construction Engineering

Vehicles:

- Varies but usually 2

Personnel:

- Commander (07)
- 1 Assistant Squad Leader (05+)
- 4 Construction Specialist
- 2 Heavy Equipment Operators

These are the guys that build (and rebuild) stuff from bridges to barracks to bunkers. They are issued I-56 rifles like everyone else and can fight if they have to. Many will to protect their 'project'.

The most common vehicles are the ubiquitous bulldozer, which is armored, very sturdy, and is equipped with an excavation scoop and blade, and an A-frame crane. With these two items, some imagination, some scrounging, and a couple of trucks, construction engineers can build or rebuild just about anything if given enough time.

Light Infantry Squad

Vehicles:

None

Personnel:

- 1 Commander (07)
- 1 Assistant Squad Leader (ASL) (05+)
- 4 Light infantry
- 1 Support weapon specialist
- 1 Platoon Specialist
  (Choose one: Communications, Demolitions, Heavy Weapons, Medic)

Any infantry squad can be broken into two fire teams, and the Assistant Squad Leader (ASL) handles the second fire team if the squad splits up.

Of the light infantry, one will typically

COMMAND REVIEW • ARMAND REFEUP

Black and Gray Markets

Main characters trying to get particular goodies for their troops with have to deal with the support units, and anything that is outside the normal official allotments often involves some wheeling, dealing and favors. Not all procurements will be 100% legal — "lost" materiel or even contraband might be available for the right price.

have a sustained fire weapon like a belt-fed light machinegun. The rest will have LAKW 1-56 assault rifles, and if they can manage, under-barrel grenade launchers. It's up to the commander of the squad to finesse some grenade launchers out of EDF stocks. After all, if it were a standard-issue item, the assault rifle would come with one already on it. Light infantry squads may have one additional specialist, or a light infantry who simply has an additional talent that requires them to carry extra equipment (and less ammunition). This could be a medic, sniper or dedicated grenadier with the GAKW launcher.

EDF light infantry will often have the initial role in an assault, taking outlying areas held by hostile forces, and using their longer ranged rifles to best effect, leaving the short range urban operations to the heavy infantry.

Heavy Infantry Squad

Vehicles:

None

Personnel:

- Commander (07) x 1
- Assistant Squad Leader (ASL) (05+) x 1
- Heavy infantry x 4
- Grenadier x 1
- Rocket specialist x 1

In practice, there is not a lot of difference between light and heavy infantry. While in theory they have different roles, most light infantry commanders try to get as much hardware as possible for their troops, and lights end up with the firepower of heavies anyway.

The key difference is in their training. Light infantry specialize in guerilla tactics, with speed and conservation of ammunition. In the rules, Light Infantry have the Gift of Semi-Automatic Expert, which is about a 10% increase in weapon accuracy over troops who do not.

Heavy infantry specialize in controlling area and in maximizing fire-power – their main tactic is to move heavy gun emplacements, with one team moving while the other one Watches. In the rules, Heavy Infantry have the Gift of Following-Fire Expert, allowing for multiple attacks up to Medium range; when combined with longer-ranged, greater-damage weapons, they will have fire superiority over a greater area than troops who lack their Gift.

Technically, heavy infantry has the riflemen armed with the LAKW 1-30 carbine with integral grenade launcher, one grenadier with the GAKW launcher, and one rocket specialist with the PRLW or PRLX rocket and a few reloads. One of the riflemen also carries a smaller ammunition load and a few spare rockets. This individual also acts as a spotter for the rocket specialist as needed.

Game Hosts can substitute heavy infantry for light infantry anywhere it is mentioned. The biggest difference is that heavy infantry is optimized for shorter range combat in defensive positions, such as in urban areas, and is less concerned with property damage than light infantry. Heavies are usually weighed down one encumbrance level more than light infantry, which makes a difference if there is going to be a lot of walking or running involved.

Mobile Infantry Squad (EDF)

Vehicles:

- 1 ACPL-8

Personnel:

- 1 Driver
- Commander (07)
- 1 Assistant Squad Leader (05+)
- 3 Heavy infantry
- 2 Support weapon specialists

A mobile infantry squad has their own ride, and can carry more gear as a result, since they don't have to walk everywhere they go. The heavy infantry all have grenade launchers on their assault carbines, and the ACPL-8 usually carries 4 PRLX rockets to be used as needed by the carried infantry (though most squads will snag as many as they can and have over a dozen if they can pull enough strings). Mobile infantry are EDF shock troops, able to deliver a reasonably powerful opening barrage of suppression fire and grenades, possibly backed by rocket fire against hard targets

and continued suppression fire from the ACPL-8s 8mm machinegun.

The disadvantage of mobile infantry is that they take more space and far more weight in an aerodyne transport, so for a limited amount of transport capacity, you can put less firepower on the ground than you can with regular light or heavy infantry.

Most Mobile Infantry Squads will greatly magnify the firepower of their vehicle with extra machineguns (sometimes as many as 6!) and grenade launchers, etc. Officially, their firepower is mediocre but in the hands of experienced crews with understanding senior officers, they can make their vehicles quite impressive.

Anti-armor Squad (EDF)

Vehicles:

- 1 AKW-24-4

Personnel:

- 1 Commander (07)
- 1 Gunner
- 1 Driver
- 1 Assistant Squad Leader (05+)
- 1 Anti-equipment specialist
- 2 Heavy infantry
- 1 Support Specialist

The main capability comes from the heavy weaponry on the AKW-24-4, though the anti-equipment sniper with the LACKW is valuable for the ability to be placed in spots the vehicle cannot possibly get to. The infantry is designed to provide close-range defense to the vehicle or sniper, and can lay down a nasty barrage with anti-vehicle grenades if needed. In addition, the AKW-24 carries enough demolition charges to block an intersection, and hold up a vehicle column long enough for the AKW-24 and sniper to get in some "quality time" with the enemy.

Armor Squad (EDF)

Vehicles:

- 2 AKW-32M

Personnel:

- 1 Commander (07)
- 1 Assistant Squad Leader(05+)
- 4 Gunners
- 2 Drivers (use Mech driver)

An armor squad is two light tanks and crew. The ASL commands the second tank. The AKW-32M has sufficient armament to put a serious hurt on any enemy combat assets.

The crew has to do their own routine maintenance during combat ops, something that thrills them no end. On garrison or other routine deployment, they usually get help from the Maintenance Engineers but in a combat operation, the engineers are too busy actually fixing battle damage.

Armor is usually deployed by the platoon, and an 8 vehicle platoon may also include 1 or 2 AKW-66 or AKW-72s.

Aerodyne Gunship Squad

Vehicles:

- 1 D-9 gunship aerodyne

Personnel:

- 1 Pilot (07)
- 2 Gunner
- 1 EW Specialist
- 1 Lead repair tech (05+)
- 2 Repair tech
- 1 Wing Support Specialist

A gunship squad is one aerodyne, the people needed to fly and shoot the weapons, and repair techs to keep it working. It also includes a Wing Support Specialist who works in a particular specialty to help the entire Wing.

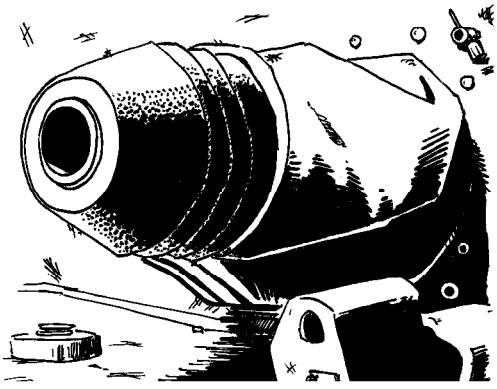
The possible Wing support specialists are Medic, Administrator, Chief Engineer and Battle Manager.

Four of these squads (vehicles) would be a Flight and 4 Flights are a Squadron. D9's technically have no spare room for passengers, but you can cram a few warm bodies into fold-down jump seats if absolutely required. The gunships need a lot of supplies and services (20,000 rounds of heavy MG and light cannon ammo per sortie), so every squadron of gunships usually has a Flight of transports to keep it going.

Only the commander's ship carries a fifth person in action, a Battle Manager.

ILR Theater Assets

ILR troops are not nearly as good on average as EDF or even most Homeguard troops. On the other hand, players will never see average ILR troops unless an ILR world is invaded. The troops the ILR uses against the



EDF in ConFed and Neutral space range from better than average to elite. The better than average troops are not as well-led or as flexible as EDF standard troops. The elite ILR troops are as good as experienced EDF troops and better than 'greenies'.

The ILR is designed for occupation and does not have the same diversity as the EDF, but it functions about the same way in practice. The ILR is much more geared around using local infrastructure for support in terms of transport, food and fuel, and its logistics is mainly concerned with having sufficient spare parts for dedicated combat vehicles.

The ILR structures its assets slightly differently, and has different proportions than a similar number of EDF troops.

For the most part, ILR forces are meant to assault lightly defended worlds (or worlds which have become lightly defended after a blistering orbital bombardment), and hold the urban areas of such worlds against all local and some EDF counterattacks. Being completely indiscriminant about what they take from the locals or what impact it has on them, they assume that they can co-opt civilian infrastructure to meet many of their logistics needs. ILR supplies are heavy on military consumables, and light on things like transport, fuel, food and medical supplies.

The main ILR unit is the light infantry battalion, with a standard company and squad structure. Troops with more experience move up to heavy infantry battalions. After that will be a standard armor battalion and aerodyne battalion. Everything else is specialized companies that are attached to a battalion as needed. Most ILR battalions start slightly over-strength by about a company and this unit (usually of relatively experienced but less 'sturdy' soldiers) is used to replace combat losses rather than as a tactical reserve. The special forces units within each light infantry battalion serve as the tactical reserve, and have their own transport assets and priority use of aerodyne assets to get where they need to be.

COMMAND REVIEW • ADVANCED REFERENCE

Veterans and Coolness Under Fire

Lapines do not have "Coolness under fire" or "Cold hearted" as species gifts, which means that basic ILR infantry will never have these traits unless they are really experienced (18 missions or more) and the supporting character improvement system is used. However, it should be assumed that any ILR combat officer who is an Adjutant or Main Character will almost invariably choose Coolness Under Fire as his Any Gift.

Light Infantry Battalion (ILR)

- 1 Headquarters company
- 8 Rifle companies

With the exception of the elite squad in each company, the ILR light infantry battalion has no integral vehicle assets and relies on co-opted civilian transport like armored trucks for any distance too far to walk. These are placeholder units that can lay down a lot of short-range fire, but have no sustainable long-range, anti-air or anti-armor ability. However, for a short amount of time they can hit hard and fast, overwhelming opponents with aggressive use of firepower and a willingness to take losses to reach an objective.

Left by itself against an EDF infantry battalion, even without aerodynes, this unit will rarely last more than a few hours before being overrun and destroyed (or forced to retreat and regroup). Consequently, the ILR does not leave it by itself.

Heavy Infantry Battalion (ILR)

- 1 Headquarters company
- 8 Mobile Infantry companies

Effectively a light infantry battalion with a smaller number of people and some armored personnel carriers. This gives the infantry some more long-range firepower and mobility, and these units are generally drawn from experienced light infantry battalions. While this makes them better units, it is also a constant drain on the talent in the light infantry. The quality and equipment of the elite squads is largely the

same in both light and heavy infantry, but the elite heavy infantry probably have more experience with using the logistics system to their advantage and may have more or better stuff than their light infantry counterparts.

Armor Battalion (ILR)

- 1 Headquarters company
- 2 Mortar companies
- 2 Anti-armor companies
- 2 Armor company
- 1 Mobile infantry company

An ILR armor battalion would be considered the cream of the crop for normal troops. They have the best equipment and people who know how to use it. They are not all elites by any means, but unless a battalion has suffered heavy combat losses, most personnel will come from situations where they had actual combat experience, even if it is only actions against insurgents on worlds ceded to the ILR at the end of the first war. They can take a serious hit without breaking.

This battalion can lay down a heavier type of firepower than an equivalent EDF unit, but perhaps not as much of it. The inclusion of heavy mortars in the ILR force structure gives them a combat multiplier that the EDF lacks with its largely direct-fire approach. ILR mortar crews are preferred targets for FDF aerodynes, and they know it. The surviving crews are pretty good at avoiding being shredded by an aerodyne beaten zone. However, this often means abandoning the vehicle in order to survive, and the EDF doesn't worry too much about mortar crews who no longer have a mortar to fire.

Aerodyne Battalion(ILR)

- 1 Headquarters company
- 4 Aerodyne gunship company (8 aerodynes per company)
- 4 Aerodyne transport company (16 aerodynes per company)
- 1 Mobile Infantry company

One difference between the EDF and ILR aerodyne units is that the combat surface aerodyne units of the ILR are Surface assets attached to a surface division, not 'loans' from Aerospace as with the EDF. ILR units are meant to transport themselves down to a planet in one trip from orbit and handle their own perimeter defense. While the ILR gunships are comparable to the EDF's D9's, the transport aerodynes are larger, and not really suited for hot landing troops. Most of the time, the transport aerodynes are used for moving light infantry from one secure area to another or shuttling elite squads around, usually with a gunship escort. Otherwise, they are if possible kept under cover and out of harm's way. The ILR also has significantly fewer gunships for a given unit of troops, most divisions having only one aerodyne battalion in support (32 gunships) and operations smaller than divisional (16 battalions) often have *no* permanent aerodyne support. At best the ILR can count on about 2 gunships per battalion. EDF on the other hand typically has a whole aerodyne gunship squadron (16 gunships) per battalion (or 2 per company!) plus another 32 transports which have their own (not insignificant) firepower.

As a strategic note, the ILR does not generally leave expensive assets like aerodynes on the ground unless the operation demands it. Normally, troops are landed by aerodyne, and aerodynes are used in the initial suppression of the enemy, but after that, most of them are recalled to orbit. This normal strategy may change as the current military situation evolves.

Light Infantry Company (ILR)

- 1 Headquarters squad
- 7 Light infantry squads

The basic unit of occupation and control for ILR forces. Trained mostly for urban operations, they either walk or get where they are going by armored truck. A company would be deemed sufficient to garrison a pacified population of up to 10,000 people. In a larger area, each company will have a sector that overlaps with that of other companies, with headquarters set up in civilian buildings within communication range of at least two other HQ units.

Heavy Infantry Company (ILR)

- 1 Headquarters squad
- 6 Heavy infantry squads
- 1 Recon squad

Performs tasks similar to light infantry, but will be assigned to areas with greater possibility of resistance, or larger open spaces that may require long range weapons to adequately engage any opposition. The scout vehicles are used as a morale booster and flanking force, and can also be used sans its

infantry to move officers or carry ammunition or food supplies.

Mobile Infantry Company (ILR)

- 1 Headquarters squad
- 5 Mobile infantry squads
- 1 Special forces squad
- 1 Recon squad

A mobile infantry company may be assigned to guard high value facilities, be a highly mobile reserve force, or provide a hard point that supports regular light or heavy infantry.

Armor Company (ILR)

- 1 Headquarters squad
- 4 Armor squads
- 2 Mobile infantry squads
- 1 Special forces squad

An armor company is the minimum self-contained mobile assault force. The tanks take out hard targets, the mobile infantry protects the tanks and clears buildings, and the special forces deal with any unique problems that show up.

An armor company would be what the ILR uses to dig in to a position that they know will be assaulted. In general, ILR knows that at some point they will be operating in an environment with enemy air superiority, and deploy and use tactics designed to help them survive. Proper use of urban terrain, anti-radar chaff, smoke barrages, ECM and strategic placement of AA assets combine to give ILR armor the capability to withdraw in good order from most situations when it is clear they cannot hold their objective.

Artillery Company (ILR)

- 1 Headquarters squad
- 5 Artillery squads
- 2 Mobile infantry squads
- 1 Headquarters squad
- 5 Artillery squads
- 2 Mobile infantry squads

Usually set back beyond the front lines and direct fire weapons, an artillery company provides central fire support to several other companies if possible. The mobile infantry provides a covering force while it is on the move, and spotting and perimeter protection when the vehicles are emplaced. Normally, the infantry will take up position in nearby buildings to cover ground and air approaches, and the armored personnel carriers will have clear fields of fire down two ground approaches, with the ability to move quickly to cover if needed.

Aerodyne Company (ILR)

- 1 Headquarters squad
- 7 Aerodyne squads

An aerodyne gunship company represents a cost in materials that equals a light infantry battalion, so they are not that common, for which EDF infantry is grateful. Normally, one aerodyne company would be attached to one battalion and called on to support the operations of several battalions.

What is more common is for a group to be called an "aerodyne company", when in fact it is simply pilots, gunners and mechanics. These personnel convert civilian rotorcraft or aerodynes into combat vehicles by the addition of door guns, machinegun turrets or underbody demolition rockets.

Transport Company (ILR)

- 1 Headquarters squad
- 4 Recon squads
- 3 Transport squads

Like an aerodyne-less aerodyne company, a transport company is mostly personnel. In this case, three squads of drivers and a brace of recon vehicles for escort purposes.

Political Company (ILR)

- 1 Headquarters squad
- 4 Political squads
- 3 Special forces squad

ILR politicals serve much the same role as EDF special services, and are given maybe a little less respect and a little more fear. Politicals operate outside the normal force structure, and political companies and squads can attach themselves to any larger unit for logistics purposes, yet still operate independently. For purposes of throwing their weight around, political officers would be considered one grade higher than they actually are.

In addition to psychological warfare, interrogation and surveillance experts, political companies also have elite troop detachments which are used for special assignments. These groups will have the best equipment and training, and for any specific missions they may have undergone extensive simulator

training. Their leaders should be considered as talented as experienced main characters, with supporting characters that are very loyal and cool under fire.

ILR Squad Assets

Individual squads, as noted under company assets. This is the usual type of squads available for constructing larger forces:

- *HQ squad*
- *Light Infantry*
- *Heavy Infantry*
- *Mobile Infantry*
- *Special forces*
- *Recon*
- *Armor*
- *Artillery*
- *Political*
- *Transport*

Headquarters Squad (ILR)

Vehicles:

- 1 WA-8C command vehicle
- 1 WA-4S scout vehicle

Personnel:

- 1 Commander
- 1 Secondary officer
- 2 Communications
- 1 Analyst
- 1 Specialist
- 1 Light infantry
- 1 Aide
- 2 Drivers

Light Infantry Squad (ILR)

Vehicles:

- None

Personnel:

- 1 Commander
- 1 Assistant Squad Leader
- 4 Light infantry
- 1 Support weapon specialist
- 1 Grenadier

The main tactic used by ILR light infantry is to use semi-auto fire against any targets that can be spotted at long range, along with grenade fire, with a switch to Suppression Fire if an enemy gets that close, firing as fast as they can reload until they reach their reserve ammunition supply, at which point they are supposed to withdraw in good order to a resupply point. For movement, the Assistant Squad Leader and 3 light infantry will advance under cover from the remainder of the squad, and they in turn will provide cover for the rest of the squad to advance.

Individual light infantry squads will readily break if hit with overwhelming fire, and ILR doctrine is to keep firing as much as possible as long as possible, just to keep an enemy from advancing or risking their own necks to return fire in kind. Normally, a platoon will be dispersed enough to not be a single target, but close enough to provide fire support. Command may also try to have a few armored vehicles nearby as a morale booster. ILR squad leaders with some initiative may also have commandeered a local truck to move themselves around in secure areas.

Heavy Infantry Squad (ILR)

Vehicles:

None

Personnel:

- 1 Commander
- 1 Assistant Squad Leader
- 2 Light infantry
- 2 Support weapon specialists
- 2 Grenadiers

A heavy infantry squad is a little more experienced, and its troops are usually considered loyal to their immediate commander for Morale purposes. The Assistant Squad Leader is also trained as an observer for indirect fire use of grenade launchers. The support weapon specialists carry enough ammunition for extended bouts of Suppression Fire, and the grenadiers may also have a few one-shot anti-armor weapons. Even with this, ILR heavy infantry generally does not have the guts to maintain discipline through an extended firefight.

Heavy infantry tactics involve a lot of long-range grenade fire, and Danger Space fire with the light machineguns. Everyone else is usually busy Watching for other threats. However, if the grenadiers switch to canister rounds, the heavy infantry can create lethal blizzards of short-range firepower suitable for street-fighting or building-clearing operations.

Mobile Infantry Squad (ILR)

Vehicles:

- 1 WA-8T

Personnel:

- 1 Commander
- 1 Gunner
- 1 Driver
- 2 Light infantry
- 1 Support weapon specialist
- 2 Grenadiers

ILR mobile infantry is essentially heavy infantry with an heavily armed armored personnel carrier. This gives them some extra mobility and protection, along with a morale boost from having a friendly vehicle providing supporting fire.

Special Forces Squad (ILR)

Vehicles:

- 1 WA-6P

Personnel:

- 1 Commander
- 1 ASL/Specialist
- 1 Driver
- 1 Heavy Infantry
- 2 Support weapon specialists
- 2 Grenadiers

Special forces are like mobile infantry, but are hand-picked for loyalty and talent. These are the ILR troops able to pull off commando raids, rappel down buildings, perform demolitions, quietly remove "inconvenient" civilians and not flinch if asked to do things normally outside the accepted practices of war. Each member of the squad is likely to have one or more marks beyond normal in a particular specialty. For instance, the heavy infantry might be a sniper with a long-range rifle, the driver might be a medic and a grenadier might be a demolitions expert.

In terms of quality and leadership, they would be on par with a starting main character and supporting characters.

The ILR values special forces very highly and will make every effort to support them in combat and extract them from bad situations if necessary.

Aside from political and artillery units, they are the only ones likely to have remote surveillance assets, and use them to good effect.

Recon Squad (ILR)

Vehicles:

- 2 WA-4s

Personnel:

- 1 Commander
- 1 Assistant Squad Leader
- 2 Drivers
- 4 Light infantry

A recon squad is simply a pair of scout vehicles. These squads are used for a variety of tasks, from "officer taxis" to convoy escorts. Their job is not to engage the enemy unless they have to, but rather to keep their eyes peeled, and if they see something, pass word onto whoever needs to know.

Armor Squad (ILR)

Vehicles:

- 2 WA-6T

Personnel:

- 1 Commander
- 1 Assistant Squad Leader
- 2 Drivers
- 2 Observers
- 2 Gunners

Since they largely use the same weapons, ILR planners have lumped the role of anti-armor and anti-aerodyne missions into one unit. An armor squad is seldom seen by itself, and would usually be part of an armor company, supported by mobile infantry.

Armor units are also fairly well trained in threat evaluation and fire discipline, and tend not to waste fire on targets they either cannot hit or cannot hurt (the former being more common than the latter). Rather, they will seek to withdraw and find someplace they can be useful. Armor squads will also be used to spearhead infantry assaults, providing both mobile cover, the ability to outrange any EDF infantry weapon and HE rounds to discourage EDF from hanging around open windows.

Technically, all the WA-6Ts armament can be fired from a remote unit that unplugs from the main gunner station and has a 50 meter fiber-optic link. However, this gives the weapons the extra 25% concealment penalty for remote viewing, and normal doctrine is to always have the weapons manned. Vehicle commanders may have sufficient motive or

initiative to buck standard procedure if the EDF is causing heavy vehicle casualties.

Artillery Squad (ILR)

Vehicles:

- 2 WA-8I

Personnel:

- 1 Commander
- 1 Assistant Squad Leader
- 2 Observers
- 2 Gunner
- 2 Drivers

This is the minimum indirect fire unit, one mortar carrier and crew. Typically, one or more mobile infantry squads will be assigned to protect and spot an artillery unit, normally 1 squad per 2 artillery vehicles.

The WA-8I only uses its tethered drone if the range is too great for direct observation, as spotting the drone is a dead giveaway that artillery is in the area.

Political Squad (ILR)

Vehicles:

- 1 WA-8X

Personnel:

- 1 Commander
- 1 Driver
- 1 Interrogation specialist
- 1 Information Resource specialist
- 1 ASL/Political officer
- 1 Electronics specialist
- 1 Computer specialist
- 1 Psychological warfare specialist

A political detachment handles both "morale" problems in a larger unit, and deals with interrogation of POWs and advises command on proper responses to civilian unrest or other problems. Within certain limits, politicals are outside the normal command structure and have a lot of leeway in their operations. Their vehicle has its own dedicated communication channels, and is also a secure place for the higher-ranked personnel to sleep. Not that they would feel at all vulnerable in the presence of friendly forces, but their job *is* very stressful and a bunk helps them recover from the strain much better than a sleeping bag on the ground. Of course, if secure civilian accommodations are available, this *is* to be preferred.

ILR political officers of O6 and up who have been doing their job right (collecting "interesting" information on people) wield influence as though they were at least one grade higher, just because of the career-damaging potential of a bad report. However, ILR politicals who try to exert influence like this and botch it up tend to suffer more severe consequences as a result.

ILR political squads normally operate in company-sized groups, and if they are seen in smaller groups, there is usually 1 special forces squad per 2 political squads, and 1 special forces squad permanently attached to the company-level political HQ.

Transport Squad (ILR)

Vehicles:

- 3 Armored trucks

Personnel:

- 1 Commander
- 5 Drivers
- 2 Maintenance technicians

An ILR transport squad is a low rank officer, a handful of draftees who have shown no aptitude for anything else, and some vocational tech graduates capable of using a wrench and a welder. Their job is to commandeer civilian trucks and turn them into useful armored personnel carriers. This is done by welding plates in key areas, adding hardpoints for pintle mounted weapons (usually over the cab), and installing basic communication modules and smoke grenade launchers.

Transport squads will operate independently in rear areas to deliver supplies, and usually operate with light escort if there is a threat of hostile action. Transport convoys are recognized as vulnerable, and if possible, some form of air support is usually provided, even if it is only a police rotorcraft with a door gun.

INDEX
ИИDEX

200mm Demolition Rocket, 258
280mm Demolition Rocket, 262
ACC, 268
ACPV-8, 269
Additional Equipment, 240
Administrative Operations, 284
Aero C-6, 280
Aerodyne Assault Wing
EDF, 286
Aerodyne Battalion
ILR, 300
Aerodyne Company
ILR, 301
Aerodyne Design, 241
Aerodyne Designations, 243
Aerodyne Gunship Squad
EDF, 299
Aerodyne Personnel
EDF, 292
Aerodyne Transport Squad
EDF, 295
Aerodynes, 239, 279
Aerospace Operations, 284
EDF, 284
Air Assault and General Tactics, 286
Air Assault Battalion, 285
Air Car, 277
Air Recon Company
EDF, 290
AKW-24-4, 269
AKW-32M, 268
AKW-66, 268
AKW-72, 268
ALE, 270
ALP, 270
ALW, 270
Amored Personnel Carrier, 205, 269
Analyst, 291, 292
Anti-armor Squad
EDF, 298
APCL-8, 205, 269
ARE, 270
Armor, 202, 236
Cockpit, 238
Sectional, 238
Specialized, 237
Armor Battalion
ILR, 300
Armor Company
EDF, 289
ILR, 301
Armor Squad
EDF, 298
ILR, 304
Armored Limousine, 277
Armored Truck, 275
Army Cargo Flatbed, 270
Army Command Center, 268
Army Engineering Vehicle, 270
Army Munitions Carrier, 270
Army Towing Vehicle, 270
Artillery Company
ILR, 301
Artillery Squad
ILR, 305
Assault Armor, 251
Assault Boats, 239
Assault Shield, 251
Assault Wing, 286
Autonomous Combat Resupply Unit, 249
AW-188, 258
AW-193, 258
B-2 Pinnance, 279
Battle Armor, 251
Battle Management Software, 208
Blowthrough, 201
Booby Trap, 254, 257
Rigging, 222
Building Vehicles, 233
Called Shots, 211
Camouflage Netting, 250
Campaign Service Ribbon, 196
Cannister Grenade, 256
Cargo Specialist, 292
Carrying Capacity, 230
Characteristics, 228
Civilian Vehicles, 275
CLRW 1-144, 262
CLRW 1-96, 262
Cockpit Armor, 238
Combat Engineering
EDF, 296
Commercial Truck, 276
Communications Expert, 291
Communications Squad
EDF, 293
Company Assets
EDF, 287
Composite Infantry Company
EDF, 289
Concealment, 209
Construction, 291
Construction Engineer Company
EDF, 289
Construction Engineering
EDF, 296
Cursory Maintenance, 243
Cybernetic Enhancements, 229
D-12 Lander, 281
D-32 Lifter, 282
D-9 Gunship, 280
Damage, 216
Damage Control, 244
Damage to Vehicles, 201
Danger Space, 217
Demolition Charge, 254
Demolition Rocket
200mm, 258
280mm, 262
Demolitions Expert, 292
Design
Aerodyne, 241
Designations
Aerodyne, 243
Direct Combat Badge, 196
Dispersion, 220
Distinguished Service Ribbon, 196
Diving For Cover, 208
E-29 Liner, 282
E32-3, 257
EDF Company Assets, 287
EDF Platoon Command Structure, 291
EDF Squad Assets, 291
EDF Theater Assets, 282, 285
Elecro-Magnetic Pulse, 223
Electronic Warfare (EW) Squad
EDF, 293
EMP Grenade, 257
Equipment
Additional, 240
EW/Communications, 292
Extra-planetary Defense Force, 265
Fiber Spool, 248
Field Modifications, 243
Fog of War, 206
Folding Barracks, 250
Forward Observer, 292
Fuel Cracker, 250
GEAR, 246
Glue Gun, 249
Gravity, 215
Grenade Launcher
MT 200, 256
Grenades, 222
Grenadier, 292
Ground Car, 276
Ground Service Personnel
EDF, 291
Gunner, 292
HARM Grenade, 256
Headquarters Squad
EDF, 293
ILR, 302
Heavy Armored Vehicle, 272
Heavy Infantry Battalion

ILR, 300
Heavy Infantry Company ILR, 301
Heavy Infantry Squad EDF, 297 ILR, 303
Heavy Infantry Vehicle, 269
Heavy Weapons Expert, 292
Helicopter, 277
Hiding a Vehicle, 206
Hit Locations, 202
Homeguard, 265
Homing Weapons, 223
Hostile Environment Operations Vehicle, 269
Hot Pods, 250
HVDD 15, 260
IKW-112, 275
ILR Squad Assets, 302
ILR Theater Assets ILR, 299
ILR Vehicles, 271
Improved Combat Staff, 253
Independent Forces, 265
Indirect Fire Expert, 219
Infantry, 292
Infantry HQ Company EDF, 288
Infantry Support Vehicle, 272
Infuser Pump, 248
Inter-Lapine Republic, 266
Irritant Grenades, 255
K2, 257
K3, 256
KA1, 256
KW-112, 263
LAKW 1-62, 261
Legion of the Blue Star, 195
Legion of the Nebula, 195
Legion of the Nova, 195
LH 100-2, 259
LH 20-2, 259
LH 60-1, 259
Liaison Squad EDF, 294
Light Infantry Battalion ILR, 300
Light Infantry Company ILR, 301
Light Infantry Squad EDF, 297 ILR, 302
Light Reconnaisance Vehicle, 272
Light Support Vehicle, 274
Light Tank, 268
Listen, 210
Loading a Vehicle, 239
Logistics Battalion EDF, 287
Loss of Mobility, 205
LRCKW-C, 261
Machine Gunner, 292
Maintenance, 292
Maintenance Squad EDF, 294
Maneuvers, 199
MCR, 249
Medals, 195
Medic, 292, 293
Medical Squad EDF, 294
Meritorious Conduct Medal, 195
Military Ambulance, 271
ML 202, 257
MMA, 271
MMSA, 271
MMSSA, 271
MMSTA, 271
Mobile Anti-Armor Company EDF, 289
Mobile Army Surgical Hospital, 271
Mobile Army Ward, 271
Mobile Infantry Battalion EDF, 286
Mobile Infantry Company ILR, 301
Mobile Infantry Squad EDF, 298 ILR, 304
Mobile Rifle Company EDF, 289
Morale, 195
MT 200, 256
Multi-Species Combat Rations (MCR), 249
NS-6, 263
Overwatch Software Module, 254
Perception, 207, 210, 211
Pilot, 293
Platoon Command Structure EDF, 291
PLRX Rocket, 262
Political Company ILR, 302
Political Squad ILR, 305
Portable Comm Array, 252
Power, 234
Reaction Battalion EDF, 284
Recon Grenade, 255
Recon Squad ILR, 304
Reinforced-Chassis Civilian Vehicle, 275
Repairs, 243
Ribbons, 195
Rifle Company EDF, 288
Rocketeer, 292
Routine Maintenance, 244
SA-8c, 262
Sectional Armor, 238
Sensor Pod, 252
Shock & Awe, 206
Smell, 210
Sneak, 210
Sniper, 292
Spaceship Combat, 197
Spare Parts, 244
Special Forces Squad ILR, 304
Specialized Armor, 237
Species, 225
Speed, 199
Sprinting, 231
Squad Assets EDF, 291 ILR, 302
SS-18i, 263
Staging Vehicle, 273
Standard Battalion EDF, 285
Steel Rain, 219
Supply, 292
Support Engineer Company EDF, 290
Support Squad EDF, 296
Support Vehicle, 273
Suppression Fire, 216
Surface Operations, 284 EDF, 284
Sustained March, 230
Tactical Advisor, 292
Tank Destroyer, 268
Terrain, 213
Theater Assets, 282, 299
Thermobaric Grenades, 254
Timeline, 180
Total Awareness, 209
Transport Company EDF, 290 ILR, 302
Transport Squad EDF, 295 ILR, 305
Turrets, 238
Unit Citations, 196
Urban Assault Vehicle, 268
Urban Support Vehicle, 274
Utility Items, 248
Vehicle Armor, 202
Vehicle Body, 241
Vehicle Commander, 292
Vehicle Design, 233
Vehicle Driver, 292
Vehicle Duels, 212
Vehicle Gunner, 292
Vehicles Design, 233
Vehicular Combat, 197
WA-45, 272
WA-6P, 274
WA-6T, 272
WA-8I, 274
WA-8P, 272
WA-8T, 273
WA-8X, 273
War Trophies, 248
Watching, 209
Weapons Table, 265
Wounded in Service Ribbon, 196

ALBEDO
PLATINUM CATALYST
Anthropomorphic Science-Fiction Role-Play

Sanguine

Better roles. Better play.

Available at hobby, book and game stores.

http://www.sanguine.com

兎用心棒
USAGI YOJIMBO™
ROLE-PLAYING GAME

Albedo is ©1984, 2004 S.A. Gallacci. Usagi is ©1984, 2005 Stan Sakai. All likenesses used under license to Sanguine Productions. All other materials ©2005 Sanguine.